White Paper

G700c

Only touch can do

Sony Ericsson

Preface

Purpose of this document

This White paper will be published in several revisions as the phone is developed. Therefore, some of the headings and tables in this document contain limited information. Additional information and facts will be forthcoming in later revisions.

The aim of this White paper is to give the reader an understanding of the main functions and features of this phone.

People who can benefit from this document include:

- Operators
- Service providers
- Software developers
- Support engineers
- Application developers
- Retailers
- IT decision makers

Sony Ericsson Developer World

At www.sonyericsson.com/developer, developers find the latest technical documentation and development tools such as phone White papers, Developers guidelines for different technologies, Getting started tutorials, SDKs (Software Development Kits) and tool plugins. The Web site also features news articles, moderated discussion forums offering free technical support and a Wiki community sharing expertise and code examples.

For more information about these professional services, go to the Sony Ericsson Developer World Web site.

Document history

Change history		
2008-09-17	Version 3	Bluetooth™ wireless technology section updated
2008-05-14	Version 2	Camera specification section updated, miscellaneous updates
2008-02-10	Version 1	First released version

Contents

Product overview

G700c offers a perfect balance between an approachable design, an effective user interface, and practical applications. It is Sony Ericsson's first Symbian phone for ordinary people. They will use the phone mainly as a phone, but yet they need a phone with capabilities which will help them organize their lives.

Simplicity in design indicates a uniform, but far from boring form language. The shape is ergonomical for a practical use with a feeling of being at home. The ergonomic shape and grip, the earthy theme, and the 5-way navigation key – that's part of G700c's approachable design.

The touch display, together with the large font sizes and setup wizards, contribute to the effective user interface. The innovative Note-it function, The Touch Calendar, and the comprehensive Messaging function are all very practical applications.

The target consumer group for G700c is "in-touch organizers", representing 14% of the entire population. Their life is a juggling act, and their mobiles keep them connected. They need information for weighing up decisions carefully and doing things properly. Services such as transaction services, information updates and positioning services are important, but they mainly use their phone for calls and SMS messaging.

Key features

Finger-friendly UI

With its touch-screen and larger font sizes and hit areas the user interface of G700c is truly finger-friendly – "only touch can do". On side of the screen there are scrolling dots to be used as an enlarged area for scrolling. Finger scrolling can be used in the Media Center and Browser.

Keylock key

G700c is equipped with a dedicated keylock key.

Media Center

Media Center is a unified presentation for all multimedia applications, like music, pictures, video and mobile TV. It is the result of the implementation of the XrossMediaBar concept, developed by Sony for its Playstations.

Messaging hardware key

This hardware key offers a shortcut to the Messaging function. It is appealing, practical and easy to use, and it is a perfect solution for an in-touch-organizer, who can select between email, push email, Web mail, and instant messaging.

Panels

Panels is a new convenient feature in G700c offering shortcuts to the user's favourites in different areas. The Panels feature is accessible directly from Standby view.

Push email

The push email clients for the major Operator solutions are supported in G700c. Exchange ActiveSync™ is pre-installed.

Note-it hardware key

This hardware key offers a shortcut to the new and innovative Note-it function. When pressing the key, the screen turns into a yellow sticker, on which a note can be written either using the stylus or the keypad.

Torch always at hand

When this feature is switched on the camera LED is lit, and it is never no more than two presses away. Without having to activate the camera the phone has turned into a torch.

Touch calendar

G700c's calendar function has been improved compared to the calendar function in previous Symbian phones, and is now called "Touch calendar". The new calendar function is even more intuitive and user-friendly.

2.4-inch transflective colour touchscreen

The large 2.4-inch QVGA (240 x 320 pixels) full graphic 262k touch-sensitive colour screen communicates both advanced multi-functionality and ease of use. It enhances and facilitates navigation and viewing, for example, as it comes to high-quality multimedia and entertainment.

A transflective screen is significantly easier to use when the phone is held in direct sunlight.

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Bluetooth™ wireless technology

Several devices can be connected to G700c using Bluetooth wireless technology up to 10 metres away (simultaneous Bluetooth™ connections). For example, the phone can be answered with a Bluetooth headset when it rings and images can be beamed to another phone at the same time. Several mobile phones can take part in a Bluetooth-supported game and the phone and a computer can exchange data such as images, video clips, business e-cards, music files and calendar data. G700c also supports real time transferring of stereo audio to, for example, a stereo Bluetooth headset.

Email setup wizard

Setting up the phone for email has never been simpler. The user just enters his or her email address, user name and password – that is all. Seconds later G700c has been configured for email and is ready to send and receive email messages (works for POP as well as IMAP accounts).

FM Radio with RDS

The FM radio with RDS (radio data system) offers instant and easy access to FM radio channels. Users just plug in their handsfree headsets (works as an antenna) and can start listening to their favourite stations. The radio can also be started by the alarm clock. RDS information, which is sent out by the currently tuned-in radio station, is displayed directly on the screen.

3.2 megapixel camera

G700c is equipped with a 3.2 MP camera for digital still images and video recording. For still images the 3.2 MP camera has Photo fix functionality, which means that an under-exposed picture can be improved by letting the camera calculate and adjust the light balance. The video playback quality is equal to TV quality, that is, 20 fps (frames per second). Using picture and video blogging, email or MMS users can easily share their photos and videos with others. (Video blogging will be enabled in maintenance release 1 of the software.)

Gaming

Gaming is still a very popular feature in mobile phones, and with Advanced Java, users can add new games and skill levels to further enhance the entertainment value of the phone. There are several embedded games included in the phone at delivery.

Instant Messaging (IM)

An integrated Instant Messaging application is available to Operators and their community partners.

JAVA™

Download extra content with Java™, for example, new information and entertainment-based applications. This gives users a possibility to personalize the functions and features in their phones. Developers get the opportunity to create new applications.

Memory Stick Micro™ (M2™) slot

G700c is equipped with a slot for Memory Stick Micro™ (M2™) memory cards of sizes up to 8 GB. This is equal to 8000 songs in eAAC+ format, equal to 700 CDs, or around 2000 songs in MP3 format. A memory card is accessible from a PC using USB 2.0 High-speed. This permits a transfer of files at 480 Mbps, meaning that 1 GB of data can be transferred in about 3 minutes!

Music recognition – TrackID™

A music clip is recorded from the FM radio or Sound recorder, and sent to the TrackID™ Internet service. Song title, artist and album name, if available, is sent back to the user within seconds.

Opera™ 8.0 Web browser

Opera™ 8.0 allows full HTML browsing and supports all de facto standards. It features normal or small screen rendering as well as full screen view. The browser now includes Flash light 3.

Personal Information Management (PIM) data synchronization

A user can stay up-to-date with everyday events by synchronizing phone contacts, calendar appointments and tasks in the phone with the corresponding data in a computer. The USB cable (which comes with the phone) and the built-in Bluetooth feature can be used together with the synchronization software available on the supplied CD.

Pictures and video blogging

Pictures and video blogging are integrated features, meaning that they are directly connected to the camera application and the video camera application respectively.

PlayNow™ 3.0

PlayNow™ is a direct-link download application. PlayNow™ users can connect to a live list of top music hits, videos, games and pictures. Content can be previewed before purchasing.

RSS Reader

RSS provides a way for Web sites to distribute their content outside of a Web browser. With the RSS Feeds application the user gets information from selected sites on the Internet into an easy-to-view format without having to browse the Web.

Simplified multitasking

When Task manager is accessed, the screen from which the application is launched does not disappear. It will still be visible as a background screen in G700c, while the list of recent applications pop-ups from the bottom of the screen. This has proven to be a more effective and user-friendly way of presenting the Task manager feature for the user.

Sony Ericsson Media Manager

Media Manager is music, photo and video clip management software, available on the CD which is included in the kit. Media Manager is used to transfer music, videos, and photos to and from the phone. Users can prepare files for transfer even when the phone is not connected to any PC. They can search for and select music on their PCs or audio CDs and convert existing audio tracks to formats that are suitable for mobile use before transferring them to their phones. They can also subscribe to feeds, such as video and music podcasts.

UIQ 3.0 / Symbian 9.1 operating system

UIQ 3.0 is a media-rich, flexible and customizable software platform, pre-integrated and tested with Symbian OS v9. The Symbian OS makes it possible to add useful applications to the phone including navigation, travel and organizer enhancements.

X-Pict Story

Brand new feature for creating professionally-looking slide shows including sound and impressive transitions.

Controls and operation

Ear speaker

On/Off button

Stylus

Volume keys

Keylock key

5-way navigation key

Selection key

Selection key

Messaging key

Note key

Memory card slot

Back key

C key

Camera key

Indicator light

Silent key

Connector for charger and accessories

Strap holder

Microphone

Battery cover

Photo light/Torch

Loudspeaker

Camera

Standby view

Once the phone is started the Standby view automatically appears on the screen.

The Standby view acts as the starting point for performing a variety of tasks and for accessing applications via the Main menu.

The Standby view is highly customizable, just about every aspect of its appearance, content, navigation methods and behaviour can be changed.

Panels

The new Panels feature in G700c offers shortcuts to the user's favourites in different areas, for example, Bookmarks, RSS feeds, and Favourite contacts. Users can also add their own shortcuts to applications and functions in the phone.

The Panels feature is accessible directly from Standby view by pressing left or right on the navigation key.

Touchscreen

G700c offers a large 262 k colour touchscreen, supporting landscape view for imaging and browsing.

To navigate menus and select items the user taps the screen using a fingertip or the included stylus.

Text input methods

G700c offers three text input methods:

- Directly-on-the-screen writing, using the stylus (handwriting recognition).
- The on-screen keyboard (virtual keyboard) located at the top of the screen in certain dialogs.
- The numeric keypad below the screen. This provides keypad-based prediction and multitap input. Keypad prediction allows words to be entered by a single keypress for each letter (as opposed to the multiple keypress).

Text options supported:

- Auto-capitalization
- Word completion
- Next word prediction
- Spelling suggestions
- Dual language prediction dictionaries for bi-lingual users

Enhanced text prediction

For the input methods of the on-screen keyboard and handwriting recognition, enhanced text prediction can be used. The primary word or next word prediction suggestion is presented, with additional suggestions in a pre-edit box at the top of the screen. If a word is misspelled, the pre-edit box may also suggest closely matching words in the selected language dictionaries, words that have been typed previously, or items that have been stored in the 'My words' personal dictionary.

Note: While entering text, the user has the option to either select any of the word suggestions displayed, or to ignore them and continue entering text via the chosen method. If a prediction suggestion is shown when sending/saving the input text, this word will not be sent/saved.

Flight mode

GSM or Bluetooth connection from a mobile phone may be harmful to the safe operation of an aircraft.

Flight mode is a special mode that disables all radio functions, but still allows the user to listen to music, use PIM applications and play games.

At startup of the phone the default setting has been changed from previous Sony Ericsson Symbian phones: In G700c there is no longer any question to the user whether to start the phone in Flight mode or Normal mode. The Flight mode menu is thus only available as a manual setting.

Miscellaneous

Models

Chinese version (GPRS) – G700c:

- People's Republic of China
- Chinese keypads, Pinyin and Strokes input method
- Latin characters on the keypad
- Chinese handwriting recognition

- Chinese dictionary
- Lunar calendar
- Two languages in phone at delivery; Simplified Chinese (ZS) and English (EN)

Accessories

G700c supports a large range of accessories. See Accessories on page 58.

Manuals

A User guide and a Web guide for G700c will be available at www.sonyericsson.com/support. The Web guide offers more in-depth information on G700c functionality.

Images

Product comparison

On the following pages Sony Ericsson G700c is compared with one of its predecessors – Sony Ericsson P1i.

Sony Ericsson G700c and Sony Ericsson P1i have important differences in both hardware and software.

Sony Ericsson P1i combines business with pleasure in one stylish, compact package. The main focus is efficient communication and messaging, with the most versatile ways of entering text.

Including most of the Sony Ericsson P1i features, plus a number of new ones, G700c is a phone aimed for an even wider audience – the in-touch organizers (described above).

Comparison table

	G700c	Sony Ericsson P1i
Hardware		
Size (mm) and weight	106 x 49 x 13, 99 g (incl. battery)	106 x 55 x 17, 124 g (incl. battery)
Colour	Mineral Grey	Silver Black
System	GSM 900/1800/1900	Dual mode UMTS 2100 & GSM 900/1800/1900
Battery	BST-33 (950 mAh)	BST-40 (1120 mAh)
Talk time	GSM up to 12 hours	GSM up to 10 hours UMTS up to 3.5 hours
Standby time	GSM up to 380 hours	GSM up to 440 hours UMTS up to 350 hours
Music playback time	Up to 27 hours	
Display	2.4" QVGA (320 x 240 pixels), 262 k colours TFT touchscreen	2.6" QVGA (320 x 240 pixels), 262 k colours TFT touchscreen
Transflective screen	Yes	No
Navigation	Navigation key, 5-way	Jog Dial, 3-way
RAM memory	128 MB	128 MB
Flash memory (total)	256 MB	256 MB
Application CPU	ARM9, 208 MHz	AARM9, 208 MHz
Hardware Graphics Accelerator	Yes, Open GL ES	Yes, Open GL ES
User memory, internal	160 MB	160 MB
User memory, external	No, but Memory Stick Micro™ (M2™) cards of up to 8 GB supported.	Yes, Memory Stick Micro™ (M2™) 512 MB card included. Memory cards of up to 8 GB supported.
QWERTY keyboard	No, standard phone keypad	Yes, dual function
Keylock key	Yes	Yes, combined with Back key
Back key	Yes	Yes
Play key	Yes	Yes
Dedicated Note-it key	Yes	No
Dedicated Messaging key	Yes	No
Dedicated Web key	No	Yes
Keyboard backlight	Yes	Yes
Torch function	Yes	No
Camera	Yes, 3.2 MP with fixed focus	Yes, 3.2 MP with autofocus
Video camera	Yes, VGA	Yes, VGA

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Connectivity:		
USB	2.0 High Speed (up to 480 Mbps)	2.0 Full Speed (up to 12 Mbps)
- mass storage support	Yes	Yes
- charging support	Yes	Yes
IrDA (infrared)	No	Yes
Bluetooth	2.0	2.0
WiFi	No	Yes, 802.11b (11 Mbit/s
Software		
Operating system	Symbian™ OS V9.1	Symbian™ OS V9.1
UIQ version	3.0	3.0
MMI version	UIQ 3.0	UIQ 3.0
Multitasking	Yes	Yes
Music	Media player	Music player
OMA DRM support	Yes, phase 1	Yes, phase 1
FM Radio	Yes	Yes
Podcasting support	Yes	No
Browser	Opera™ 8.0, including frames and JavaScript technology support	Opera™ 8.0, including frames and JavaScript technology support
Audio codecs supported	MP3, AAC, AAC+, eAAC+, AU, iMelody, AMR(-NB), RMF, DLS, G-MIDI, SP-MIDI, WAV and XMF.	MP3, AAC, AAC+, eAAC+, AU, iMelody, AMR(-NB), RMF, DLS, G-MIDI, SP-MIDI, WAV and XMF.
Video codecs supported	H.263 Profile 0 level 10; H.263 Profile 3 level 10; MPEG-4 Part 2, Visual Simple profile Level 0, Level 0b, Level 2 and Level 3; RealVideo 8 and 9.	H.263 Profile 0 level 10; H.263 Profile 3 level 10; MPEG-4 Part 2, Visual Simple profile Level 0, Level 0b, Level 2 and Level 3; RealVideo 8 and 9.
Image editor	Yes	Yes

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Technologies in detail

This chapter offers a detailed description of the technologies available in G700c.

Messaging

When pressing the assigned messaging key on G700c a selection of four options displays:

- email

- push email
- Web mail
- instant messaging (IM)

Email

G700c supports the following email standards:

POP3	Used to retrieve and delete messages from an incoming mail server in the network.
IMAP4	Also used to copy, retrieve, move and delete messages from an incoming mail server. IMAP has more features than POP, such as remote folders. IMAP4 also offers support for the IDLE command, which (if supported by the server) offers push capabilities.
SMTP	Used to send messages from a mail client to a mail server.
MIME	A format that describes data, such as defining the attachments included in an email.

Most of the standards above are supported by Internet Service Providers and many corporate environments. G700c is supplied with an Internet wizard which helps users to configure an account. OTA (Over The Air) configuration of email and ISP accounts is supported.

G700c supports SSL and TLS encryption.

Automatic polling can be used so that email is automatically collected and presented in the Inbox. Controls are provided to filter messages based on size, enabling cost and download time to be managed.

Another option enables only email headers to be presented in the Inbox. Headers are quick to download. The user may read and select headers and request the message to be downloaded if necessary.

If IMAP4 is used, the IDLE command can be enabled to keep the phone connected to the email server. This allows the server to push new messages directly to the G700c as they arrive.

Email transmission is performed in the background, making it possible to perform other messaging functions during transmission.

A list of recently used addresses is available when creating a message. G700c allows distribution lists to be created and sender ID information is sent with message alerts.

G700c can send any type of attachment, including the following:

- Pictures
- Video clips
- Audio files
- SIS files
- JAR/JAD files
- Themes
- vObjects (vCalendar, vCard, vNote, vBookmark)

A signature may be set up so that essential details are automatically copied to the end of each outgoing email.

The supplied PC Suite for Sony Ericsson enables email to be synchronized with Microsoft Outlook and Lotus Notes. During synchronization, new

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email from the PC is transferred in to the corresponding 'synchronized email account' Inbox on G700c. Messages and replies written using this account on G700c are transferred and sent via the PC.

Web-based email messages can, of course, be accessed using the G700c browser.

Email folders

Messaging accounts have the following folders: Inbox, Outbox, SIM, Draft and Sent. Additional folders can be created, see below.

To improve the organization of folders more folders can be created locally on G700c. Local folders are only visible in the Messaging application.

Push email

Push email is a method of 'pushing' or forwarding email to mobile devices as soon as a message reaches the email server. These solutions may also include calendar and contacts synchronization.

Push email solutions allow email messages to be delivered in the background in the same way as SMS or MMS messages. G700c is prepared for these solutions with Exchange ActiveSync™ pre-installed. A rich set of other third party applications are available.

Note: Push email applications are generally quite power-consuming. Phone performance may be improved by changing from 3G to 2G.

Push methods

The various solutions use different methods to push messages, usually IP push, by listening to dedicated ports when a session is active. This is similar to instant messaging solutions. Some solutions may also use SMS messages with triggers to the application to start a synchronization or download, sometimes referred to as pseudo-push.

Security

All solutions use end-to-end security using SSL, 3DES or AES encryption. Most solutions are based on the use of a fixed password for push email. Initially key exchange is also done by using device parameters such as the IMEI number. A few solutions combine push with one-time passwords that are limited for a certain amount of time before being re-entered. Many solutions have functionality for enforcing screen passwords. There is also sometimes theft and loss protection through wipe-out commands and lock-out.

Exchange ActiveSync™

The push email application Exchange ActiveSync™ is normally pre-installed in the phone and ready for setup.

With Exchange ActiveSync™ corporate email, calendar items and contacts on a Microsoft™ Exchange Server 2003 or 2007 can be wirelessly synchronized with the corresponding information in the phone. When on the move, the user can easily, for example, look up details in the company global address book or accept a request for a meeting.

All changes in the phone are automatically synchronized with the user's Exchange Server data. Similarly, all changes to the Exchange Server data are transferred to the phone. With the Direct Push feature activated, synchronization is immediate. If the user, for example, receives a new email in Outlook™ (or a similar client) it is instantly copied to the phone.

Web mail

Web-based email or Web mail refers to an e-mail service intended to be primarily accessed via a Web browser, as opposed to through an application such as Microsoft Outlook or Outlook Express.

Some of the most popular Web mail providers are Yahoo! Mail, Hotmail and Gmail.

G700c users can use their favourite Web mail account to access their email in the same way as when at the office or at home, with one exception – it can be done one the move!

Instant messaging (IM)

The Instant Messaging client OMA IMPS 1.2 is included in the phone on certain markets. It offers easy and affordable access to the existing AOL, MSN or Yahoo Instant Messaging account of a user.

SMS, EMS and MMS messaging

For technical specifications, see Short message service (SMS) on page 71, Enhanced message service (EMS) on page 72, and Multimedia messaging service (MMS) on page 73.

SMS (Short Message Service)	A user can send messages containing up to 160 characters to and from GSM mobile stations (up to 70 characters using unicode text). G700c also supports concatenated SMS messages, that is, a user can write a longer message and G700c will automatically send it using as many SMS messages that are needed. The user can reply to an SMS message with an MMS message and send a fax using the SMS message as the bearer. There is enhanced support for delivery reports and short message class support.
EMS (Enhanced Messaging Service)	Adds powerful functionality to the well-known SMS standard. An EMS message may include sounds and melodies, pictures and animations and formatted text. Also EMS messages can be sent as concatenated messages.
MMS (Multimedia Messaging Service)	MMS messages may include combinations of video clips, animations, pictures, sounds and text. The following tasks can be performed using this service: smart uploads and downloads, automatic transmission when leaving Flight mode, video recording directly from the MMS application, background transmission, direct link use (customized shortcuts to an Operator's Web site to get new templates), and replying to MMS messages with SMS messages. When creating MMS messages, Picture Editor is used for editing inserted JPEG, PNG, GIF and BMP images as well as for creating simple JPEG images from scratch. It is possible to crop, rotate and resize images. The editor also includes fun layers, clip art and tools for drawing on the image using the stylus. Different pen sizes and colours are available, as well as a text tool for formatting and inserting text into an image. A simpler version of Picture Editor is used for creating images for EMS messages.

SMS, EMS, and MMS messages as well as Local Information, and beamed and auto configuration messages are all stored in one unified Inbox in Messaging.

Area Information

Area information is SMS Cell Broadcasting.

An SMS cell broadcast allows information to be sent to all mobile phones in a particular geographical area. Information such as traffic news or local weather reports can be sent to an area covered by a single cell or to the entire network.

Broadcast messages are organised into a number of channels. This allows different types of messages to be broadcasted on different channels. Using the phone, users can choose which broadcast channels to subscribe to. The requested text messages are received, the message either scrolls across the Standby screen or is placed in the Inbox. The user can choose to save the message to the Inbox or not.

Broadcast subscriptions are controlled from the Area information dialog.

When a user is subscribed to channel 50, and this channel is supported by their network, the ID of the current cell (or group of cells) is displayed below the network Operator name in the phone display. This is often the telephone area code or postal code of the current location.

Browser

G700c features an integrated Opera™ 8 browser. This browser has been designed to display practically all Web pages on the Internet. The browser supports the de facto HTML standard 'street HTML' (used by most Web developers), JavaScript™ technology, frames, and the ability to add plug-in applications. Users thus can access their favourite Web pages also from the phone.

It is easy to switch between portrait and landscape presentation, as well as change from normal view with scroll bars to full screen view. Pen motions are used to slide the page on the screen.

Users can select 'fit to screen' to reformat pages to fit inside the screen width and eliminate the need for horizontal scrolling (Small Screen Rendering is supported).

Some key features:

• Flash light 3 preinstalled – enables the viewing of TV in the mobile.
• By tapping and holding on a bookmark the page is displayed in a new window.
• By tapping and holding on a link a context-sensitive menu of alternative actions is displayed: an http link would give the options Open, Open in new window, Open in background and Send as.
• Includes Secure downloads manager – especially useful for downloading commercial media objects that need to be paid for.
• Pages can be saved for offline viewing.
• All private data can be cleared with one command.
• Built-in pop-up blocking.

Browser security

G700c supports TLS/SSL to provide a secure encrypted link between the browser and the Web site. This method is commonly used for secure transactions on the Web. An icon in the display indicates when a secure connection is in use.

TLS Security

When using certain Internet services such as banking, the user may require a secure connection between the phone and the Web site. G700c is based on the WAP 2.0 specification where security functionality is specified with a technology called WAP TLS Profile (Wireless Application Protocol Transport Layer Security).

The Internet protocols that handle the connection, its transport and its security are structured in protocol layers. The security is handled by the TLS layer operating above the transport protocol layer. There are three TLS classes that define the levels of security for a TLS connection:

• Anonymous TLS involves encryption with no authentication.

• Server authentication involves encryption with server authentication.
• Client authentication involves encryption with both server and client authentication

Server authentication	Requires a server certificate stored at the server side and a trusted certificate stored at the client side.
Client authentication	Requires a client certificate stored at the client side and a trusted certificate stored at the server side.

Certificates

To use secure connections, the user needs to have certificates saved in the phone. Certificates can be downloaded and installed when required. There are two types of certificates:

Certificate authority	A trusted certificate used to verify that a Web site is genuine. If the phone has a stored trusted certificate of a certain type, it means the user can trust all Web sites which present a certificate that can be verified by the trusted certificate. Certificates are preinstalled in the phone and can be downloaded from the trusted supplier's Web page.
User certificate	A personal certificate that verifies the user's identity. A bank that the user has a contract with may issue this kind of certificate.

Preinstalled in G700c are X.509 certificates from Baltimore, Entrust, Geotrust, GlobalSign, GTE Cybertrust, RSA, Sony Ericsson, Thawte and VeriSign.

Touch calendar

The calendar in G700c is a true touch calendar. Thanks to the larger font size it is more convenient than ever to use a fingertip when browsing or updating the calendar.

The touch calendar application keeps track of appointments and events and enables reminder alarms to be set. The calendar view has been enhanced to display the selected day's events on the screen.

Calendar entries are displayed in local time, but all appointments and reminders are saved in UTC (Coordinated Universal Time). Consequently, if a user moves to a different time zone the calendar updates the appointments and reminders automatically.

Meeting requests can be sent from the calendar application via email, and meeting invitations can be received by email and added to the calendar.

The alarm signal can be personalized using sound clips. Appointments can be shared using Bluetooth wireless technology, and also through messaging. Local and remote synchronization are both supported using SyncML. For more information, see Synchronization on page 44.

The lunar calendar is supported.

Media

Media is a unified presentation for multimedia content like pictures, music, and video. The individual applications in Media can be run in either portrait view or landscape view.

Media is the result of the implementation of the successful XrossMediaBar concept, developed by Sony for its Playstations.

Photo Album

Note: For supported file formats, and more, see Pictures on page 70.

The Photo album in G700c is divided into:

- Latest photo – the latest captured photo/video saved in the phone or on a memory card.
- Camera album – photos and videos captured with a camera, presented in chronological order, by month.
- Photo tags – this is where previously tagged photos can be viewed.
- Pictures – pictures that are not captured with a camera, such as preloaded and downloaded pictures.

Picture blogging

- Integrated function that supports up-loading as well as reading (browsing) of still pictures.

- Standardized formats.

Video blogging and downloading

- Integrated function that supports up-loading as well as browsing of video clips, for example, clips stored on the popular YouTube site.
- Compliant with the MPEG-4 compression standard.
- Supports H.263 and H.264 (from MR-1) codecs.

X-Pict Story™

Using X-Pict Story a user can create quality slide shows by easily combining pictures and music and adding professional transitions. The result is convincing!

Music player

Note: For supported file formats, and more, see Music player on page 67.

The Music player in G700c is similar to the Walkman® player used in Sony Ericsson W960, but it has been further-developed.

The keypad, the 5-way navigation key and the volume button are used to start and stop playback, switch tracks and adjust volume.

Songs may be collected in numerous ways, including Internet download and file transfer from PC.

The phone comes with the Media Manager PC program that supports the extracting of songs from CDs, compression and transfer to the phone. Thanks to the USB high-speed support, the transferring goes extremely quick (1 GB of data can be transferred in about three minutes).

Music can be further organized on the G700c. Music is grouped by Album, with album art being displayed on the screen, by Artist or arranged in user-created playlists.

The player also automatically generates playlists based on, for example, the most or least played songs.

The Music player features an equalizer with predefined settings like Mega Bass™, Pop and Classical.

The Music player is intelligently aware of other applications in G700c. Playback is automatically paused when a telephone call is made or received.

Video player

Note: For supported file formats, and more, see Video player on page 68.

The Video player allows users to view video clips that are stored in the phone. The Video player supports the common features that are available in PC video players (play, stop, reposition within the clip, next and previous media file), in addition to play back options such as default view option, repeat current clip and repeat all clips.

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Contacts

The Contacts application in G700c holds the details of all the user's contacts. It is fully integrated with the phone and other PIM applications. Each contact can contain multiple phone numbers and email addresses, names, addresses, birthday details, anniversary details, personal notes and a picture or photo. Most of this information will typically be transferred to G700c when it is synchronized with a PC application such as Microsoft® Outlook® or Lotus Notes®. Contact data can also be added and edited on G700c. Local and remote synchronization is possible using the SyncML standard, see Synchronization on page 44.

Data can be beamed to and from G700c using Bluetooth wireless technology. It can also be sent and received using Messaging. For more information, see Object exchange – 'Send as' on page 40.

Contacts are displayed in a list, which may be filtered by folder, such as 'business' or 'personal'. To see a contact's details select the contact. Tap the icons alongside the contact's details to launch a phone call, a new message or a URL in the browser.

Calls received from new numbers can automatically cause the user to be prompted to save the number.

Contact details can be added to a distribution list. Distribution lists can be used to send groups of contacts the same email, SMS, EMS or MMS message.

Organizer

File manager

File manager is used to view, rename, copy, move and delete files and folders in the Phone memory and on memory cards.

Two tabs are used to organize the contents – one for the Phone memory and the other for memory cards.

Time

Time is a sophisticated alarm clock, which can show the time both locally and in another time zone. If the user swaps the local time zone to the other specified time zone the local time zone is automatically displayed in the second time zone area. Alarms can be set, and the alarm signal can be any supported sound that is stored on the phone.

Tasks

Tasks is a simple yet powerful application that can be used to make reminder notes. Task items may be beamed, exchanged using Messaging, and synchronized (locally and remotely) using SyncML. For more information, see Synchronization on page 44.

Notes

The Note-it application provides a quick means of making notes. It has the following characteristics:

- Simple to use application.
- Includes an alarm function.
- Note color changeable.
- To scribble a note either the stylus (for text or sketch) or the keypad can be used.

- There is no need to save a note using a unique filename. Date and time are automatically added to all notes, which are listed in a chrono-logical order.
- Notes can be created during a call. The note is then automatically named with the other party's number, name (if known), time of call and date.
- A note can be attached to an MMS message or to an email message.
- The Note-it application is funny to use!

Quickoffice™

Quickoffice™ is an application that can be used to view and edit Microsoft Word, Excel, PowerPoint and text documents.

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Quickoffice™ scans G700c and displays a list of all compatible files (.xls, .doc, .ppt, and .txt) depending on where they are in the phone (the Phone memory and a memory card can be searched).

From the file manager in Quickoffice™ a user can delete, move or copy documents, create new Word and Excel documents, and open existing ones. Documents can also be sent using email or MMS, or over a Bluetooth™ connection.

Quickword™

Quickword™ allows the user to view and edit word processing documents saved in standard .doc format on G700c. Computer format email attachments can be opened directly in the phone without the need for pre-conversion at a computer. Existing documents may also be edited.

Documents can be transferred to and from G700c using email, MMS, or Bluetooth™ connectivity. Quickword™ opens files created with Microsoft Word 97, 2000, XP and 2003 and are saved in Microsoft .doc format.

When a document is opened for editing, a copy of the document is created so that the original file is intact. When saving a file, Quickword™ creates a native Microsoft Word file.

Key features
- Refined user interface for easier document editing and viewing.
- Multiple Undo and Redo commands including cut, copy, paste and formatting functions.
- View tables embedded within documents and edit the text (tables are displayed in a single column format for easier viewing on G700c, actual table format of the document is not affected).
- MS Word compatible paragraph and style formatting.
- Advanced text formatting and full font control including typeface, size, bold, italics, superscripts, subscripts and underline.
- Open, view, edit and create both .doc (MS Word) and .txt (text) files.
- Edit Word documents, and forward to colleagues just as from a PC.
- ZoomView™ – lets the user pick the best display size.
- Quick navigation through documents.

- Colour support and colour picker for changing font colours.
- Keyboard support for folding portable keyboards and on-device text entry.
- Format paragraphs with left, center and right text justification.
- Portrait and landscape mode supported.
- Cut and paste text, undo edits, and more.
- Edit-protect mode – prevents editing or making alterations while reviewing documents.

Quicksheet™

Quicksheet™ is a full function spreadsheet with Microsoft Excel compatibility. Quicksheet™ opens files created with Microsoft Excel 97, 2000, XP and 2003 and saves them in Microsoft .xls format.

Key features
- Offers the most frequently used scientific, financial, statistical, date & time, lookup and aggregate Excel functions and sorting.
- Multiple sheets per workbook and sheet linking.
- Advanced cell editing features that allow to you create and modify spreadsheets easily. Permits cell formatting in a number of different ways.
- Quickly sort data and lists.
- Find and Find & Replace functions.
- Cell and font colour formatting.
- Column resizing, row and column freezing.
- Portrait and landscape mode supported.
- Saves changes as a native Excel file that can be sent via a USB or Bluetooth connection, or via email.

Quickpoint™

Quickpoint™ allows you to view and edit Microsoft PowerPoint presentations. The application is compatible with MS Office 97, 2000, XP and 2003. It allows a variety of modes for viewing such as slide, notes and outline views.

Key features
- Edit slide text in Outline view and show the changes in the Slide View.
- Edit speaking notes.
- Edit PowerPoint presentations and forward them to colleagues just as from a PC.
- View and edit PowerPoint slides and notes. Advanced viewing includes three views: Outline view, speaker's Notes view, and Slide view.
- Zoom in and out.

- Select between Portrait and Landscape mode.
- Save changes as a native PowerPoint file that can be sent via a USB or Bluetooth connection, or via email.

- Give presentations directly on the G700c with iGo® Pitch Duo™ display accessory or on a remotely controlled PC.
- Send presentations to a TV using the Sony Ericsson Media Viewer MMW-100 or to a Bluetooth-enabled PC projector.

Pdf+

Pdf+ is a viewer for Portable Document Format (or PDF) files. Pdf+ reads and displays standard PDF files, without the need for conversion on a computer to a proprietary format. Pdf+ can display PDF 1.0, 1.1, 1.2, 1.3, 1.4 and 1.5 files.

Pdf+ features:

- View the text, line drawings and bit maps in the document.
- Browse the document, and go to a specific page.
- Wrap the text to make it fit the screen.
- Zoom in and out to maximize the amount of text and graphics that can be read on the screen.
- Hide the title and the status pane to maximize the viewing area.
- Search for strings in the text of the document.
- View and follow bookmarks.
- Follow links to other pages in the document.
- Follow URLs.
- Read files protected with a user password.

The 'wrap' view displays the document so that as much text as possible is visible on the screen. Images and line drawings are not visible in this view.

Note: Pdf+ does not handle the dynamic content of a PDF file, such as hypertext links, and cannot render Type 0 or Type 3 fonts.

Document types supported

Document type	Features
Adobe PDF	Viewer
Microsoft Excel	Editor
Microsoft PowerPoint	Editor
Microsoft Word	Editor

Speed dial

From Speed dial a user can launch the following:

- A call
- An entry in Contacts

Converter

The Converter helps converting the following measurements: distances, volumes, weights, temperatures, speeds, areas and currencies.

Remote sync

See Remote synchronization on page 45.

Timer

The Timer can be used to remind the user within a certain amount of time. The application is hidden until the time has passed. A message is displayed and a sound is played exactly when the time has passed.

Stopwatch

The Stopwatch can be instantly started and stopped to measure an exact duration of time. The Stopwatch continues to run when a call is answered. The Stopwatch can run in the background if the application is closed. An icon is displayed in the status bar to show that it is running. Up to nine events can be timed and recorded.

Calculator

The Calculator has the features of a standard desk calculator, and is always available from the application launcher.

Connections manager

Connections manager is an application that lets the user view and close all open Internet connections. Here the user can also view and reset the logs for open and closed Internet connections.

Entertainment

Camera

Note: For technical specifications, see 3.2 Megapixel camera on page 68.

With the integrated 3.2 megapixel camera, the user can take pictures and video clips and store them in the Phone memory or on a memory card.

The megapixel quality gives excellent results when pictures are printed or viewed on a computer or TV.

Pictures can be sent as attachments in email or as picture messages (MMS). A picture can also be sent via a USB or Bluetooth™ connection.

Using the camera and video

The camera and video can be started with the camera button or from the Main menu. The viewfinder is displayed in landscape orientation.

G700c has fixed focus functionality, which means that the picture is captured immediately when the camera button is pressed.

To many of the camera settings there are shortcuts – on the keypad and on the screen. The most convenient way to change the camera settings is directly from the touch UI.

Video format

Video can be stored in the following formats:

- 3GPP for low quality video recordings to be used in MMS messages.
- MPEG-4 for normal and high quality video recordings.

Multi-shot mode

When taking a photo of an object that moves quickly, multi-shot mode may be used to take several pictures in rapid succession. Pictures are captured as long as the camera button is pressed. Multi-shot pictures are captured in VGA resolution.

Auto-exposure control

The camera has a full automatic exposure control that selects the optimal exposure needed to get an excellent picture.

Lighting adjustment

The camera has built-in compensation for bright skies, which automatically adjusts the brightness of landscape pictures. This avoids the dark and dull pictures that automatic cameras sometimes give in difficult lighting situations. It is especially effective for outdoor photography on grey and cloudy days.

RSS feeds

RSS provides a way for Web sites to distribute their content outside of a Web browser. A news Web site might have an RSS feed which contains breaking stories, while a magazine Web site may provide an RSS feed with excerpts of their latest articles.

An RSS feed is a file containing a list of news items, each of which has a title, a description and a URL link to read more on the content provider's Web site.

With the RSS Feeds application the user gets information from the Internet into an easy-to-view format without browsing the Web sites. The user can browse information from dozens – or hundreds – of Web sites without ever visiting them.

With RSS Feeds the user can do the following:

- Subscribe.
- Update feeds manually or via a predefined schedule.
- Organize feeds into folders.
- Read news items.
- Send a news item to another device via email, SMS, MMS, or Bluetooth connectivity.
- Link to more information via the Web browser.

Radio

The FM radio works on the 87.5 to 108.0 MHz frequency band.

A handsfree headset or an accessory with an FM-radio antenna must be attached to the phone for the FM-radio to work.

The RDS function displays radio text information directly on the screen. This information is sent out by the radio station the user is currently tuned in to.

Using the FM radio it is possible to do the following:

- Record a short section of a song and use the TrackID™ Internet service to automatically identify it.
- Select the FM radio as the alarm signal, thereby allowing G700c to work as a clock radio.
- Display frequency, station name, RDS, radio text and signal strength if the information is available.
- Search a station automatically or manually.
- Enter the required frequency manually.
- Save a station and customize its saved name.
- Automatically switch to stations when they are broadcasting news or traffic announcements.
- Mute the radio.
- Listen to the FM radio in the background while using another phone application.

PlayNow™

PlayNow™ 3.0 is a unique direct-link quality music download application. PlayNow™ users can connect to a live list of top music hits, videos, games and pictures. Content can be previewed before purchasing.

The content available from PlayNow™ differs from country to country. Games cannot be previewed and are only available in certain phone modes.

MusicDJ™

MusicDJ™ is a MIDI sampler with pre-recorded drum, bass, chord and accent loops in different music styles. To create personal polyphonic ringtones the samples are combined.

TrackID™ – music recognition

Function that enables the user to record a few seconds of a song, send it to a music recognition service on the Internet and have information about the song – title, artist and album information – sent to the user's phone. TrackID™ is not available in all countries.

Sound recorder

Sound recorder is a simple screen-driven dictation machine with the added advantage that recordings can be beamed and exchanged via Messaging. Using the Sound recorder, a user can also:

• Record a personal ringtone.

• Use the TrackID™ service: A music clip is recorded and sent to the TrackID™ service, which returns the song title, artist and album name, if available. TrackID™ is a free service.
• Make changes to existing recordings.
• Rename recordings.
• Delete recordings.

Games

Gaming on G700c is a thrilling experience due to the 3D hardware accelerator. The following games have been preloaded in the phone:

Café Sudoko

Café Sudoku will entertain seasoned Sudoku fans and newcomers alike like newer before. With over a million available unique Sudoku puzzles and three levels of difficulty a user will never stop having fun with it – no matter what the skill level is. Sudoku on mobile will never be the same!

With Café Sudoku's online version users can create their own Café and customize their avatar, play with their friends and be part of the Café Community.

SIMS 2

"Create your Sim and customize your house with furniture, house improvements and even new rooms. To satisfy your tailored Sim's needs you can get your character employed, acquire new skills, buy gadgets, create relations and even get married. The Sims 2 offers the consumer to take part of the PC blockbuster in a great looking 3D mobile version."

The Sims is the #1 selling PC title of all time, and it is marketed on front covers and in competitions all over the world. The Sims brand is frequently updated with new expansion packs. Recently, the Sims Pets was released in a mobile phone version, in conjunction with a PC release.

Settings

This is where the general settings of the phone are set. It also contains the settings for Sounds & Alerts, Display, Calls, Connectivity and Messaging.

Note: In previous Symbian phones this part of the UI was called "Control panel". To align the terminology used in Symbian phones with the terminology used in other phones from Sony Ericsson it has been decided to change to "Settings".

Phone applications

The following call features have been included in G700c:

- Ongoing call menu: G700c has a dynamic ongoing call menu that changes to help the user perform actions quickly and simply.
- Accept calls: users can specify which calls to accept and which calls to reject.
- Rich call functionality: G700c allows SMS and MMS messages, as well as contact cards to be easily sent during a call.

- Call notes: G700c can launch Notes during a call. The note is automatically named with the other party's number, name (if known), time of call and date. The user can start writing in the note immediately.
- Follow up call: G700c can automatically create follow up call tasks. The task contains the phone number, contact name, time of call, and date of call.
- Speakerphone.

Call log

The Call log is where all calls – dialled calls, answered calls and missed calls – can be seen. Detailed information for a call can be displayed and the user can also dial a number displayed in the Call log.

Business telephony

Corporations have traditionally used fixed-line and DECT phones in the office, but now there is a strong trend towards the use of mobile phones to access business telephony features. Of prime importance, however, is that users can still access the features and functionality of their corporate communication system, no matter which phone they are using. G700c can interact with the following corporate systems:

- A corporate PABX (Private Automatic Branch Exchange) switch, equipped with a mobile extension port (like the Ericsson MD110 and BusinessPhone).
- The mobile centrex service, if provided by the Operator.
- A telephony server located at the Operator's or customer's premises.

Feature buttons

The user activates corporate features by selecting commands from a list, which can be dynamically sent by the server via an IP link, or pre-configured by the company's IT manager, the Operator or a service provider. Each command displays a text description of the function.

When a command is selected, pre-configured DTMF tones are used to communicate the desired function to the server. The phone can even be used to send data that the user is prompted to provide, such as the date they will be back from a business trip. Feature commands and text descriptions have to be programmed using XML and then imported into the phone.

Ongoing call features are reached from the active call view.

Offline commands and corporate telephony settings can be accessed by pressing the 'corporate telephony' icon once a calling card has been set up. Activating a command will result in an IP packet being sent to the server.

Routing of corporate calls

If a company uses a PABX switch, calls must be routed via the PABX to gain access to corporate features and resources. G700c can route outgoing calls to the corporate switch, instead of to the dialled B-party. To complete a call, the B-number is then sent to the mobile extension port of the PABX and the call set-up is completed. This process is completely transparent to the user.

A user may dial either an internal number, such as, 1234, or a public number, like +468 123 4567. G700c can be set to bypass the switch for certain types of calls.

Configuring the phone for the company

The person responsible for the corporate communication services defines how the phone shall be configured. This may be the company's IT manager, the Operator or a service provider. They define what feature commands shall be displayed in the phone, how these commands interact with the PABX switch and what text is displayed. They also define how G700c shall handle calls to and from the corporate switch. This is all done in an XML-structured configuration file, with the extension .pbx. Once created, this configuration file can be easily installed onto the G700c.

To ensure that only authorized personnel have access to the PABX, approved mobile phone numbers are added to the list of mobile extensions in the PBX, and only these numbers will be able to use the facilities available.

For more information, see www.sonyericsson.com/professionalsolutions. Look for "Areas of use".

Connectivity

Bluetooth™ wireless technology

G700c features the built-in Bluetooth™ 2.0 wireless technology. Its Bluetooth power class 2, +4 dBm radio link, operates in the globally available 2.4 GHz radio frequency band, ensuring fast and secure communications up to a range of 10 metres, or more in ideal conditions.

Note: In the few countries where the use of Bluetooth wireless technology is not allowed, the Bluetooth function will be disabled. In countries where only lower output than 4 dBm or 0 dBm is allowed, the output is limited as a customized factory setting.

Bluetooth wireless technology facilitates instant connections, which are maintained even when the devices are not in line of sight. Enhanced audio quality voice transmission is provided under adverse conditions, making it possible to use a headset connection at all times.

Using Bluetooth wireless technology in G700c

True wireless connection

Connect without cables to headsets, car handsfree equipment, computers/PDAs, digital still and motion video cameras and other devices.

Up to 16 added devices

G700c identifies and maintains up to 16 devices. This is equal to the maximum number of items that can be displayed in the phone when browsing for items.

Radio link

No line of sight is required; the phone can remain in a briefcase or in a pocket, but the performance may be improved if there are no solid objects between the phone and the other device.

Secure and fast

A data connection over a Bluetooth link to a computer or PDA turns the phone into a modem for Internet access or for data transfer (faster than cable).

Synchronization

Fast synchronization, even without line of sight, of calendar, notes and phonebook with a computer.

Business cards

Quick exchange of business cards, notes and calendar events with other phones and devices.

Imaging and music

As it comes to imaging and music a user can:

- Exchange still images and video clips with another mobile phone, a computer, or a digital still or motion video camera.
- Use the phone as a modem to send pictures from a digital camera to an imaging server.
- Exchange music files with another mobile phone or a computer.
- Show images on a TV or another display via an accessory, such as the Bluetooth Media Viewer, MMW-100.
- Transfer stereo audio in real time, to a stereo headset supporting the A2DP profile.

Audio quality

G700c uses an algorithm that repairs lost audio packets. When needed, a new packet is inserted with content based on previous packets. This, in conjunction with the high sensitive and high output power radio will enhance the audio quality compared to a standard Bluetooth device.

File sharing

By using the Server role of the File Transfer Profile, the phone enables the use of a computer to manage content files that reside in the phone's file system. Most computer Bluetooth applications provide an explorer-like user interface for the file transfer service. The content in the Games and more folder is not exposed in the file transfer server. Opening one of the folders will show a list of files related to that folder, such as, images in the Pictures folder. Using the computer application the user can now: retrieve files from phone to computer, delete files from the phone and transfer files from the computer to the phone using the normal drag and drop mechanisms provided by the computer.

File browsing

By using the Client role of the File Transfer Profile, the phone enables the user to access file systems of other devices, that also support the Server role of the same profile. After pairing the phone with the other device, the user can connect to the other device by selecting it in the 'My devices' list on the Bluetooth menu and selecting the browse option that should be available on the left selection key. If the browse option does not appear the user can select the Service option to update the phone's knowledge that file browsing is possible to use with the device. When the phone is connected to the file server, the user can browse the shared folders and retrieve files listed in different folders. Files are transferred to the file server device using the normal Send/via Bluetooth option.

Media viewing

The phone can send images and sounds to a media viewer device, such as, the MMW-100 TV adaptor accessory. The user can also conveniently run a slide show on the TV showing a set of nice phone camera pictures for family and friends. The phone can connect to a Bluetooth device that can receive images, the image can be transferred to the remote screen and displayed.

Profiles

The following Bluetooth profiles are supported in G700c:

- Dial-up Networking Profile (DUNP)
- Generic Access Profile (GAP)
- Generic Object Exchange Profile (GOEP)
- Object Push Profile (OPP)
- Serial Port Profile (SPP)
- Handsfree Profile
- Headset Profile
- Synchronization Profile
- Basic Imaging Profile (BIP)
- File Transfer Profile (FTP)
- Human Interface Device (HID) host only Profile
- Stereo Advanced Audio Distribution Profile (A2DP)
- Advanced Audio/Video Remote Conference Profile

System functions

Power save mode

The phone uses sniff mode on headset and handsfree connections which means reduced power consumption and shorter connection set-up times.

USB

G700c is USB (Universal Serial Bus) 2.0 compliant, and for the transferring of large amounts of data, a user can select high-speed mode – up to 480 Mbps. This greatly reduces the time needed to transfer, for example, a large number of music files.

USB in a mobile phone means a possibility of convenient data transfer between the phone and a computer.

At synchronization of PIM data in the phone with the corresponding data in a computer (using PC Suite for Sony Ericsson) USB full-speed mode, 12 Mbps, is used.

G700c supports USB charging, however, not in high-speed mode.

Object exchange – 'Send as'

G700c makes it easy to transfer objects via a Bluetooth connection, or via Messaging. This is presented to the user via 'Send as' commands in applications. The user simply selects an item, such as a contact, then selects 'Send as' and chooses the method to be used for the sending. To beam an appointment to other people, or to receive a new background image from someone are a few examples.

Bearer > Application (Data Type)	Bluetooth	SMS	MMS	Email
Contact (vCard)	OK	OK	OK	OK
Appointment (vCall)	OK	OK	OK	OK
Task (vCall)	OK	OK	OK	OK
Note	OK	OK	OK	OK
Image	OK	–	OK	OK
Sound Clip (Ringtone)	OK	–	OK	OK
Bookmark	OK	OK	OK	OK
Sound recorder (Voice note)	OK	–	OK	OK
Third Party Application ('Send as' API)	OK	–	OK	OK

- To beam an item over a Bluetooth connection, scanning is used to find other devices within range. The user then selects the required device and sends the information across.

- When sending an item using an SMS, EMS or MMS message, or an email, the required message type is created with the selected object attached. It is then sent over the air (OTA).

Memory Stick Micro™ (M2™)

G700c is equipped with a Memory Stick Micro™ (M2™) memory card slot, but no card is included at delivery.

Memory cards offer a convenient way of adding storage and other functions to a mobile phone, and use it to, for example:

- Transfer images to other image-aware devices, like computers and printers.
- Transfer data and media (sound, pictures, video clips, documents etc) between G700c and a computer or Mac.

- Store backup copies of important files on the memory card.
- Install new applications from the memory card.
- Have third party applications make use of memory card storage.
- Transfer data on a memory card using a USB cable between G700c and a connected computer.
- Personalize G700c using media on a memory card.
- Use media on a memory card when composing MMS messages.

Dimensions	15 x 12.5 x 1.2 mm

Volume	225 mm^3
Connector pin	11-pin
Maximum capacity	8 GB
Max. data transfer rate	160 Mbps
Operating voltage	2.7 V / 3.6 V
Interface	Serial interface and 4-bit parallel interface
Operating temperature	-25 ~ +85°C
Copyright protection	MagicGate

Memory Stick™ compatibility

A Memory Stick Micro™ (M2™) memory card may be inserted into, for example, a computer or camera with Memory Stick™ support, using a Memory Stick Micro™ (M2™) adaptor. A Memory Stick™ has full electrical and file system compatibility.

Compatibility with other Memory Stick™ devices

G700c defines its own folder structure on a Memory Stick Micro™ (M2™) memory card, within a vendor-specific area and this is the only area that can be accessed by all the G700c applications, except File manager. File manager may be used to move files between G700c's MMFH (MultiMedia File Handling) system and folders placed on a Memory Stick Micro™ (M2™) by other devices, thus allowing files to be shared between G700c and other devices.

PC and Apple® Mac® support

PCs and Apple® Mac® computers may be enabled for Memory Stick™ via built-in Memory Stick™ slots, PC Card adaptors, USB adaptors and even a Memory Stick™ enabled mouses. (Memory Stick Micro™ (M2™) adaptor is required).

Data storage

The memory of G700c is divided into:

- A Phone memory with a phone part, and an 'Organizer' part running Symbian OS. The 'Organizer' part consists of a RAM (Random Access Memory) memory that is controlled by the Symbian OS, and a 256 MB flash memory. The flash memory is split into approximately 96 MB for operating purposes and up to 160 MB for storage of user data, additional languages and settings such as the active theme. This part behaves just like a normal disk drive. The folders can be viewed and managed from the File manager application or from a connected computer.
- A Memory Stick Micro™ (M2™) memory card of maximum 8 GB (not included at delivery) for user file storage. This memory behaves like a normal disk drive. It can be accessed as a USB mass storage device from a computer, allowing fast transfer of files.

User storage

The user storage space (C: drive) is shared across applications without any imposed restrictions, apart from the whole space becoming full.

Unlike a computer, the user does not need to be aware of the underlying file system. Applications will always store information automatically in the appropriate folder, simplifying the management of data. Third party applications may implement more complex file management solutions where required.

Additional storage space is available by using memory cards. Memory cards of up to 8 GB capacity are supported. Any number of memory cards may be used for storage. See "Memory Stick Micro™ (M2™)" on page 38 for more information on how to use memory cards when exchanging data with other devices.

Depending on the application, data can be beamed, mailed, uploaded to the Web, transferred to a computer or moved to a memory card in order to archive and create free user space on Sony Ericsson P1. See "Synchronization" on page 44.

User storage configuration in G700c

Applications and information are placed in the internal storage of G700c in the factory. This provides sample demonstration, educational, multimedia and fun content so that G700c can be used directly out of the box. Much of this can be deleted by the user in order to make the space available for personal use.

Action at master reset

Master reset restores the phone to its purchase state, that is, all user data is deleted. When a master reset is initiated the user can select to keep all user-installed applications. Data can be restored as follows:

If the user has backed up data in G700c using the PC Suite for Sony Ericsson, then the C: drive can be restored to the state it was in when the backup was made. The exception is DRM Forward Lock protected files, which cannot be transferred to other media and therefore not backed up.

Otherwise, data can be re-loaded from the Sony Ericsson Web site.

Since Multimedia content is easily transferable using a Bluetooth connection, it is simple to restore favourite content from someone else's G700c (unless DRM protected).

Note: If there is a memory card inserted in the phone, its content is not affected by a master reset.

Folder view of internal storage

This section explains in more detail how the data is organized on the C: drive.

When viewed from a PC using PC Suite for Sony Ericsson, the 'C:' drive is named 'Phone memory', but only a subset of the folders is accessible from the PC.

There is a folder for each media type: image, audio and video. Documents (such as Microsoft Word files) are stored in the 'Document' folder. An 'Other' folder provides a place for files that do not fit into the other categories.

A folder is created beneath the applicable media type. There is no limit on the number of subfolders that can be created. Unfiled folders are created in the initial folder structure and all material is placed in the unfiled folder by default. Sony Ericsson Multimedia Content is stored in 'Sony Ericsson' subfolders.

Synchronization

To be truly mobile, users must be able to carry their important information with them. Equipping mobile phones with Personal Information Manager (PIM) programs like calendars, task lists and phonebooks gives users access to their most important data anywhere and anytime. The information is kept updated by synchronizing it with the information at the office or at home. The growing use of groupware such as Microsoft Outlook means that more and more meetings are booked electronically in daily business life.

G700c uses the SyncML 1.2 protocol for synchronization. This means that it has the compatibility to synchronize with a wide variety of devices over a number of different communications media.

SyncML – an OMA standard for synchronization

In G700c SyncML is used for both local synchronization (with a computer using a USB cable or a Bluetooth™ connection) and remote synchronization over HTTP.

SyncML background

Leading the way in providing remote synchronization capability, Sony Ericsson realizes that interoperability of remote synchronization is of utmost importance if mobile data use is to become as widespread as generally predicted. That is why Ericsson, along with IBM, Lotus, Motorola, Matsushita, Nokia, Palm Inc., Psion and Starfish Software, founded the SyncML initiative in February 2000. Supported by more than 600 software and hardware developers, the SyncML initiative seeks to develop and promote a globally open standard for remote synchronization, called SyncML. Unlike many other synchronization platforms, SyncML is an open industry specification that offers universal interoperability. Because it uses a common language, called XML, for specifying the messages that synchronize devices and applications, SyncML has been called the only truly future-proof platform for enabling reliable and immediate update of data. The benefit for the end user is that SyncML can be used almost anywhere and in a wide variety of devices, regardless of application or operating system.

What information can be synchronized in G700c?

Application	Remote sync	Local sync
Contacts	OK	OK
Calendar	OK	OK
Tasks	OK	OK
Notes (text part only)	**	OK
Email	**	OK
Bookmarks	**	OK

** Notes, Email and Bookmarks implementation are proprietary and therefore not SyncML compliant.

Remote synchronization

Remote synchronization takes place over the air using HTTP and is the ideal way to keep G700c up to date. 3G enables a fast connection to the network – the synchronization can be started in seconds.


Synchronization services are offered by third-party service providers and as added capability to corporate PIM applications. Corporate PIM applications, such as Microsoft® Exchange, can be supplemented with SyncML capability.
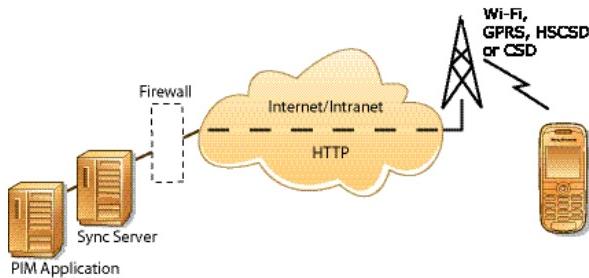
Server alerted synchronization

If updates are made on the computer the server automatically notifies G700c. The updates are automatically synchronized to G700c. A remote server can initiate a synchronization with G700c using WAP Push.

Local synchronization

G700c is supplied with PC software for local synchronization. It may be installed from the supplied CD or downloaded from the Web. For more information on PC Suite, see PC Suite for Sony Ericsson on page 47.
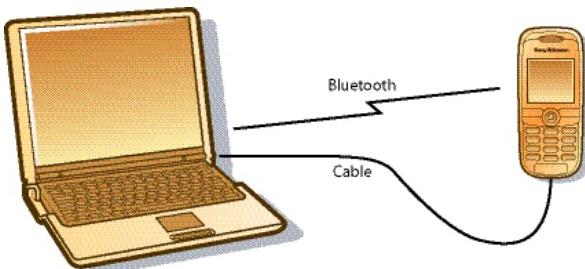
Bluetooth™ wireless technology or cable

G700c always synchronizes using SyncML, regardless the connection type. It can be connected via a Bluetooth™ connection or a USB cable. The cable is connected directly to the phone or via a desktop charger connector.

Synchronization capacity

G700c meets the standard performance requirement to synchronize the following number of items "within a reasonable time":

Contacts	2000
Calendar items	1000
Notes	500
Tasks	500
Email messages	1000
Bookmarks	500

Automatic synchronization

Synchronization can be configured to start automatically, given that a suitable synchronization program is running on the other device:

- When the USB cable is plugged in to G700c.
- When Bluetooth wireless technology is activated on both devices and they come into operating range.

Intelligent process

A synchronization engine performs the task of synchronizing. For local synchronization, the synchronization engine is an application that runs on the PC. The synchronization engine compares,

updates and resolves conflicts to ensure that the information in the phone is the same as that in the PC.

PC Suite for Sony Ericsson

The PC Suite for Sony Ericsson CD, which is delivered with the phone, includes the following applications:

Synchronization	Application for local synchronization of PIM data between the phone and PC applications such as Microsoft Outlook and Lotus Notes®. For more information on synchronization, see Synchronization on page 44.
File Manager	Enables Windows Explorer to see the phone as a device and the Phone memory and an inserted memory card as two disk drives on the device. Files can be copied between the PC and the phone, or in the other direction. Typical uses include: • Archiving pictures taken on G700c to PC storage. • Moving images to G700c to use in personalization, MMS messages etc. • Storing MP3 files on a memory card. • Storing work documents (Word, Excel) on G700c to read on the move.
Mobile Networking Wizard	Wizard and drivers for using the phone as a modem over a Bluetooth connection, or using the USB cable.
Backup Manager	Files in the user data area (which includes installed third party applications) are backed up and stored on a PC. The restore option returns data to the phone, for example, after a software upgrade. Backup Manager requires a USB cable connection.
Download Language	Enables the user to load a different language from the CD and switch the phone user interface to that language. The language files are also available for download from www.sonyericsson.com/support.
Application Installer	Software for installing new applications in the phone from a PC.
Adobe Photoshop Album SE	Application for storing, editing and sharing images.
Apple QuickTime Player	Application for viewing audio and video files.
Sony Ericsson Update Service	Application for updating the phone with the latest software.

Compatibility

The PC Suite for Sony Ericsson software enables synchronization with the following Personal Information Managers (PIMs):

• Microsoft® Outlook® 2000, SP3
• Outlook 2002, SP2
• Outlook 2003, SP1
• Outlook 2007
• Lotus Notes® 5.0, 6.0, 7.0
• Internet Explorer 6, 7
• Windows Address Book
• Windows Contacts

The PC Suite for Sony Ericsson software is designed to work with:

• Windows 2000 Professional, SP4
• Windows XP Home, SP2
• Windows XP Professional, SP2
• Windows Vista Business, Enterprise, Home Basic, Home Premium, Ultimate

The general system requirements are as required by the used PC operating system, or as a minimum:

• PC with 500 Mhz or higher processor clock speed

- 256 MB of RAM or more
- 1.5 GB of available free hard disk space
- Super VGA (800 x 600) or higher resolution video adapter and monitor
- Keyboard and Microsoft Mouse or compatible pointing device

Older operating systems, for example, Windows 98, Windows ME and Windows NT will not work together with PC Suite for Sony Ericsson.

It is recommended that the PC Suite software is installed for the same language as the operating system on the PC.

Mac compatibility

PC Suite for Sony Ericsson cannot be used on Mac computers. For Mac users, however, it will be possible to use Apple's synchronizing software iSync 2 to synchronize data in the G700c with PIM applications in the computer.

Limitations: Only the address book and the calendar can be synchronized, and the synchronization must be performed over a Bluetooth connection.

Media Manager

Apart from all the PC Suite applications, the consumer pack also contains a CD with software for loading the phone with music files – Media Manager. This can be used to search for music files on PCs and audio CDs, convert existing music files, copy MP3 files to the phone, and more.

DRM

The Digital Rights Management (DRM) technology enables the secure distribution, promotion, and sale of digital media. Examples of such content include screen savers, themes, ringtones, and branded games (currently restricted to java games/midlets only). In other words, content providers can control how users may use different types of content in devices, such as, mobile phones, computers or PDAs. Content providers can also control the use of content in related services, such as MMS and download.

Sony Ericsson is actively focusing on technology standardization for the DRM concept, and supports the ongoing standardization work and activities of the Open Mobile Alliance (OMA). Sony Ericsson is fully committed to open standard solutions in the mobile environment and is a principal driver of many open standard initiatives. This will ensure the interoperability of mobile phones in the DRM area and also result in a strong, competitive DRM standard.

G700c supports the OMA DRM v1 standard.

FWL – Forward Lock

G700c supports OMA DRM Forward Lock. It is the simplest OMA use case, with no special licences defined. The content is provided in a single DRM packaged file, thus protecting the content from being distributed by the user. It enables a secure means for the content provider to deliver/provide content which incurs a charge. Forward Lock content will normally be received by G700c as part of an MMS message or via HTTP download. G700c supports OMA Download. More information is available at www.sonyericsson.com/developer.

CD – Combined Delivery

G700c supports OMA DRM Combined Delivery/ Forward Lock. Content and associated licences are downloaded or delivered to the user as a single DRM packaged file. This means that the content or licence issuer controls to which extent the content can be used. As with pure Forward Lock, the user will be unable to distribute this content for use on another device.

SD – Separate Delivery

G700c supports OMA DRM Separate Delivery. Content and associated licences are received as separate DRM packages, either simultaneously or at different points in time. This enables the distribution of content to other users – with the same possibilities to control the use of the content as exist with Combined Delivery/Forward Lock. Distribution of content to other users will require them to obtain licences from the licence issuer.

Protection properties

Content that is protected according to the OMA DRM standard is given special properties:

- Content with Forward Lock or Combined Delivery protection cannot be further distributed since the "Send to" option is disabled.
- All three types of protected content (FWL, CD and SD) packages can be stored on a memory card, thereby enabling storage of large amounts of content.
- OMA DRM Combined Delivery/Forward Lock protected content cannot be used in another device other than the device it was saved on. Only Separate Delivery packages can be used on another device, after obtaining licences to use the content on the new device. Licences to use the content can never be distributed from user to user (phone to phone). Licences always have to be obtained directly from the licence issuer.

DRM package

DRM packaging software is typically included in the software used by the content provider. It is used to create the DRM package according to the OMA DRM v1 standard before it is delivered to the phone, including content and associated licences.

In Japan, only files with SD protection for playback will be accepted in the Media player and in some European markets DRM content can be used only for automated use/themes, such as ringtones.

Personalization

G700c can be personalized by the user in one of the following ways:

- Use of a computer-based utility application.
- Via Over the Air (OTA) configuration, initiated by the Operator, user or IT helpdesk.

Alterations to the appearance of many of the screens may be simply carried out through changing the phone's Theme. New themes may be loaded on to G700c from the Internet and other sources.

Background and application shortcuts

Users can set a static image to be the background 'wallpaper' for the standby screen. The JPEG, GIF, BMP, WBMP, MBM and PNG formats are supported. Larger images will be resized to fit.

The application shortcut buttons may be personalized by the user.

Screen saver

A 'screen saver' image can be displayed after a period of inactivity. The user can switch this facility on and off. Supported formats are the same as for background images. Note that the use of animated GIF increases power consumption.

When the screen saver is deactivated, G700c will revert to the state it was in before the screen saver was activated.

Picture phone book

The user may store a picture of each contact in the Contacts application. When an incoming call is received with a CLI (Calling Line Identification) matching a phone contact, the contact's picture is displayed together with the other information. The contact's picture is also displayed when making a call, or using the speed dial screen in picture view mode. A copy of the picture is held in the Contacts database. Therefore, the original picture may be deleted or renamed without losing the copy stored in Contacts.

Ringtones

The user can add as many ringtones as desired, subject only to available file space. Ringtones may be collected from many sources including MMS, EMS, and a computer.

Any compatible audio file in the multimedia storage (in the Phone memory or on a memory card) including MP3 can be selected as a ringtone.

G700c can play both iMelody format ringtones and the following polyphonic formats: AMR, AU, MIDI, RMF (Beatnik), MP3 and WAV.

A system default ringtone is provided. This is the ringtone when G700c is first initialised. It cannot be deleted and is retained after a master reset.

A personal ringtone may be selected for a contact – the user simply selects the ringtone while entering or editing the contact's details. When the Calling Line Identification (CLI) of the incoming call is matched to a contact, the personal ringtone for

that contact will be played. If the ringtone has been deleted, moved, renamed or is located on a memory card and the phone is connected to a computer as a USB mass storage device, then the system default ringtone will be played.

If no CLI information is available, then only a default ringtone can be played. If the user has selected a personalized default ringtone and it is available (can be read from the Phone memory or an inserted memory card) then it will be played, otherwise the system default ringtone will be played.

Themes and skins

A theme or skin is a way to provide a complete customized visual experience for the user.

Themes can define:

* Text, outline and background colours.
* Background images.

* Graphical appearance of interface elements.
* Sounds for events, for example, ringtones, message alerts, notification, area info, auto set-up and reminder.

Themes and skins can be created or downloaded.

Over-The-Air (OTA) configuration

OTA remote configuration provides a simple setup of services. The user is spared the task of finding complex technical information and then manually entering it via the user interface. Instead, a Web request or a call to the mobile Operator's helpdesk is all that is needed – the appropriate settings are then sent via SMS directly to the phone.

OTA configuration using the OMA Client Provisioning v1.1 (WAP OMA Provisioning) specification – a backward compatible extension of the client provisioning functionality included in WAP 2.0 (v1.0) – enables the following parameters to be provisioned:

* WAP account (account name and WAP Gateway settings).
* ISP settings (bearer information, username, password).
* Browser settings including Bookmark (name and URL).
* OMA DS Sync settings (SyncML).
* MMS settings.
* Email account for POP3, IMAP4 and SMTP including settings (username, password, address, server details).
* OMA Device Management.

Sony Ericsson phone configurator

To configure the phone for Internet, email and MMS the necessary settings for many networks can be downloaded from www.sonyericsson.com/

support. This is a free service to owners of Sony Ericsson mobile phones.

Locks

G700c has the following lock functionality:

Phone lock

The phone lock can be set to 'Off', 'At power On' or 'When SIM changed'.

When set to 'At power On' the phone lock code (default 0000) has to be entered every time the phone is turned on.

When set to 'When SIM changed' the phone lock will be activated if the SIM is changed. This prevents other users from using the phone with their SIM without the owner's consent.

The code can be changed as long as the user knows the current code.

SIM card lock

The SIM card lock can be set to 'Off' or 'At power on'.

If the SIM card lock is set to 'Off' the SIM can be used by any user without the SIM owner's consent.

If the SIM card lock is set to 'At power on', every time the phone is switched on a user will have to enter a predefined code. The code can be changed by the users as long as they know the current code.

Inactivity lock

If the inactivity lock is activated the touch screen is locked after 60 seconds of inactivity. To open the lock, a user touches any of the phone keys and is then prompted to enter the phone lock code (see above).

Automatic keylock

If the automatic keylock is activated, the keyboard becomes locked after a period of inactivity. To turn on or off the keylock there are two options:

- Use the G700c dedicated keylock key.
- Use the standard keypad sequence (# plus "Unlock") from Standby view.

Keylock can also be turned on from the status bar "More" menu.

Automatic keylock is a user setting, only activated from Standby.

GPRS

Using GPRS with G700c has many advantages:

- Constant connection – keep an open connection to an email system or the company network, staying online to receive and send messages at all times. All connection settings can be managed by using the data connections feature.
- High speed – gain access automatically to increased bandwidth when downloading large files such as images.
- Cost efficient – use transmission capacity only when needed, thus reducing costs.
- Email over GPRS – remain connected to an email system while reading and preparing messages (which are then sent at high-speed).

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Symbian OS operating system

Symbian OS is the open operating system licensed by the world's leading mobile phone manufacturers. It is designed for the specific requirements of advanced 2G, 2.5G and 3G mobile phones. Symbian OS combines the power of an integrated applications environment with mobile telephony, bringing advanced data services to the mass market.

Symbian OS supports a wide range of device categories with several user interfaces, this includes UIQ, which is the software platform used in G700c.

Key features of Symbian OS v9.1

General

- Improved system performance, especially at start-up.
- New multimedia framework supporting recording, playback and streaming.
- Graphics – direct access to screen and keyboard gives high performance; graphics accelerator API; increased UI flexibility (support for multiple simultaneous display, multiple display sizes and multiple display orientation).
- Java™ support – supports the latest wireless Java standards. For more information, see Java™ on page 56.
- Communications protocols – wide area networking stacks including TCP/IP and WAP 2.0, personal area networking support including Bluetooth connectivity and USB; support is also provided for multihoming and link layer Quality-of-Service (QoS) on GPRS networks.
- International support – supports the Unicode Standard version 3.0.
- Data synchronization – over-the-air (OTA) synchronization support using OMA standards (OMADS 1.2); PC-based synchronization over USB and Bluetooth connections; a PC Connectivity suite providing the ability to transfer files and synchronize PIM data.
- Improved device management which provides network Operators and enterprises with new capabilities to manage phones in the field. This includes OMA DM 1.1.2 support and OMA client provisioning 1.1.
- Support for Bluetooth wireless technology eSCO and Bluetooth stereo headset profiles have been implemented.

Security

The aims of the security developments in Symbian OS v9.1 are to protect the integrity of the phone, provide extra control over user billable events and to prevent malicious software corrupting executables and data. The aims have been met by:

- Providing platform security by a proactive system defence mechanism based on granting and monitoring application capabilities through Symbian-signed certification. The infrastructure allows applications to have private protected data stores.
- A proactive defence mechanism against malware. The platform security infrastructure uses a capability-based model, which ensures that sensitive operations, such as, modifying user data, making calls and using network connections, can only be accessed by applications which have been certified by an appropriate signing authority.
- Data caging, which allows applications to have their own private data protection. This allows applications a guaranteed secure data source. This can be used for applications, such as, ecommerce. An application can access other directories marked as open but cannot access another application's private directory.
- Additional platform security includes full encryption and certificate management, secure protocols (HTTPS, SSL and TLS) and WIM framework.

EKA2 kernel

- The EKA2 realtime kernel, with guaranteed response times, provides the basis for a robust and power-efficient phone. Predictable real time operation means that the OS will respond to interrupts, system and user threads within a known period. This means that no task in the system can prevent the OS from responding to key tasks.
- Support for multiple simultaneous IP connections.

Development and testing

- Provides new customization and configurability options for the operating system.
- Symbian OS is built using the ARM RVCT 2.1 compiler, which is compliant with the ARM EABI standard. This allows compatibility with the latest ARM compilers and reduces the Symbian OS footprint while enhancing performance.
- Developing for Symbian OS – native system and application development in C++, supported by CodeWarrior and shortly Eclipse-based IDEs. Java MIDP 2 supported by all mainstream Java tools. PC-hosted emulator for general development.

UIQ 3.0

The UIQ 3.0 platform offers support for multiple form factors on the same code base and ease of Operator configuration.

UIQ 3.0 is based on Symbian OS v9.1 and is equipped to meet the various demands from phone manufacturers, network Operators and end users.

- UIQ 3.0 offers features for Operator customizations and branding. Sony Ericsson will use these features to configure G700c to meet requirements from network Operators. The same customizations can then be re-used on other UIQ phones with different form factors.
- Developers can utilize the features of UIQ 3.0 to easily develop applications.
- The SDK (Software Development Kit) can be used to expand these applications or create new ones. Building blocks, layout managers and a wide range of controls, such as menus and dialogs, make it easier to design applications for UIQ. Using these tools also gives the applications the UIQ look and feel which users are familiar with. The application framework and system services are the basis of the UI platform.

Java™

G700c supports Java™ ME CLDC 1.1.

CLDC 1.1 JSRs supported:

- JTWI 1.0 (JSR-185) consisting of CLDC (Connected Limited Device Configuration) 1.1 HI (JSR-139), MIDP 2.0 (JSR-118), WMA 1.1 (JSR-120)
- PDA PIM and File Access (JSR-75)
- Bluetooth wireless technology (JSR-82)
- Mobile Media API (JSR-135)
- Web Service (JSR-172)
- Mobile 3D Graphics (JSR-184)
- Wireless Messaging API 2.0 (JSR-205)
- Scalable 2D Vector Graphics API (JSR-226)
- Payment API (JSR-229)
- Nokia UI API 1.1

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G700c consumer package

The exact contents of the G700c package depend on the localization, but the basic contents are as follows:

- G700c with one stylus
- Battery BST-33 (950mAh)
- Charger CST-70, non-cascadable
- USB cable DCU-65
- PC Suite for Sony Ericsson CD, including Sony Media Manager
- User documentation package

Accessories

Note: This list of accessories, compatible with G700c, will be continuously updated.

ACCESSORY	PRODUCT NAME
Batteries	
Standard Battery	BST-33
Home & Office & Power	
Charger	CST-60
Desk Stand	CDS-65
External Powerpack	
Headset Charger	CST-61
Home Audio System	MDS-70
Home Audio System II	MDS-80
Leftside Deskstand / Generic Connector	CDS-75
M2 USB Card Reader	CCR-70
Micro Travel Charger SEMC	CMT-60
Music Desk Stand	MDS-60
Music Desk Stand II	MDS-65
Music Remote Control	MRC-60
Strap x 5	
Two port standard charger	CST-75
Handsfree	
Akono™ Headset	HBH-608
Basic Mono PHF - kitting	HPB-62
Bluetooth Headset	HBH-610
Bluetooth Headset	HBH-GV435
Bluetooth Headset	HBH-GV435a
Bluetooth Headset	HBH-GV450
Bluetooth Headset	HBH-IV835
Bluetooth Headset	HBH-IV840
Bluetooth Headset	HBH-PV700
Bluetooth Headset	HBH-PV702

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Bluetooth Headset	HBH-PV703
Bluetooth Headset	HBH-PV705
Bluetooth Headset	HBH-PV708
Bluetooth Headset	HBH-PV710
Bluetooth Headset	HBH-PV712
Bluetooth Headset	HBH-PV770
PHF Generic HW platform	
Portable Handsfree, mono	HPB-60
Portable Handsfree, mono Sport	HPS-60
WiFi Enabler	
Personal Music	
Sports Stereo PHF	HPM-65
Stereo Bluetooth Headset	HBH-DS200
Stereo Bluetooth Headset	HBH-DS205
Stereo Bluetooth Headset	HBH-DS970
Stereo Bluetooth Headset	HBH-DS980
Stereo Bluetooth Headset ("Clippix II", colour version for Shinobu)	HBH-DS220
Stereo PHF	HPM-64
Stereo PHF for kitting	HPM-61
Stereo PHF for kitting	HPM-62
Stereo PHF for kitting / Walkman Entry	HPM-64k
Stereo PHF HQ Audio	HPM-77
Stereo PHF remote control with display	HPM-90
Stereo PHF with RC	HPM-82
Stereo PHF with RC	HPM-85
Stereo PHF (Ace update)	
Stereo PHF (Holly update)	
Stereo PHF (Vijay update)	
Streetstyle Stereo PHF neckband	HPM-83
Ultra Style Stereo PHF	HPM-70
Ultra Style Stereo PHF	HPM-75
Ultra Style Stereo PHF (Radek update)	HPM-77

Car	
Bluetooth Car Handsfree	HCB-100E
Bluetooth Car Handsfree	HCB-300
Bluetooth Car Handsfree	HCB-400
Bluetooth Car Speakerphone	HCB-100
Bluetooth Car Speakerphone with display	HCB-120
Cig. Lighter Adapter SEMC	CLA-60
Cig. Lighter Adapter SEMC	CLA-61
Emerging Car Handsfree	
Entry Bluetooth Car Speakerphone	HCB-105
Featured Bluetooth Car Speakerphone	HCB-150
Generic holder solution for all connector locations	HCH-70
GPS Car Handsfree	
GPS enabler	HGE-100
GPS enabler II	
GPS Sports	
Stereo Mute Box	HCE-26
True Car HF	
Universal Car Holder	HCH-60
Windshield mount	HWE-40
Connectivity	
Exclusive USB Cable	DCU-65
USB Cable	DCU-60
Multimedia	
Bluetooth Jukebox	BMR-xxx
Bluetooth Music Receiver	MBR-100
Bluetooth Speakers	
Bluetooth Wrist Watch	MBW-100
Bluetooth Wrist Watch	MBW-150
Digital photo frame	
Entry portable speakers	MPS-30
Entry portable speakers II	

FM Music Transmitter (EU)	MMR-70
FM Music Transmitter (FCC)	MMR-60
Music Cable	MMC-60
Music Cable 3.5 mm	MMC-70
OneGrip Speakers	MPS-75
Portable Bluetooth Speakers	MBS-100
Portable Speakers	MPS-60
Portable Speakers II	MPS-70
Portable Speakers III (Bruce II)	MPS-XX
Speaker Bag	
Imageware	
Active Case	IAC-25
Active Case 2008	
Camera phone Case (kit with tripod etc)	IPK-100
Classic Case	ICE-25
Classic Case (Klas update)	ICE-45
Cord management	
Executive Case	IEC-20
Executive Case (Herman update)	ICE-40
SE Carry Case	
SE Carry Case update	
Style up covers	

Technical specifications

General technical data

Product name	G700c
System	Tri-band GSM Release 99 recommendations GSM 900 (CTR 19 and CTR 20) GSM 1800 (CTR 31 and CTR 32) EGSM and WCDMA FDD mode supported Latin America 1800, 1900 and e-GSM mode supported
Speech coding	HR, FR, EFR, AMR supported where available, for high speech quality
Operating system	Symbian OS v9.1 UIQ 3.0
Application CPU	ARM9, 208 MHz
EMP platform	R8+ version of EMP U100
GSM SIM	GSM SIM - GSM 11.11 Small plug-in card; 1,8 V and 3 V
Internal memory size (for user data)	160 MB
Data transfer speeds	USB High-speed, up to 480 Mbps
Length	106 mm
Width	49 mm
Thickness	13 mm
Weight	99 g
Antenna	Built-in
Colours	Sandy Brown / Silk Bronze
Battery	BST-33 (950 mAh)

Screen

Display type	TFT
Display size	QVGA
Pixel size	240 x 320
Colour resolution	262 k

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Screen surface	Touch-sensitive
Illumination	Variable intensity backlight

Performance and technical characteristics

Dimension	GSM 900/ E-GSM 900	GSM 1800	GSM 1900
Frequency range (MHz)	TX: 880 – 915 RX: 925 – 960	TX: 1710 – 1785 RX: 1805 – 1880	TX: 1850 – 1910 RX: 1930 – 1990
Channel spacing	200 kHz	200 kHz	200 kHz
Number of channels	174 Carriers *8 (TDMA)	374 Carriers *8 (TDMA)	299 Carriers *8 (TDMA)
Modulation	GMSK	GMSK	GMSK
TX Phase Accuracy	< 5° RMS Phase error (burst)	< 5° RMS Phase error (burst)	< 5° RMS Phase error (burst)
Duplex spacing	45 MHz	95 MHz	80 MHz
Frequency stability	+/- 0.1 ppm	+/- 0.1 ppm	+/- 0.1 ppm
Voltage operation (nominal)	3.6 V	3.6 V	3.6 V
Transmitter RF power output	33 dBm Class 4 (2 W peak)	30 dBm Class 1 (1 W peak)	30 dBm Class 1 (1 W peak)
Transmitter Output impedance	50 Ω	50 Ω	50 Ω
Transmitter Spurious emission	< -36 dBm up to 1 GHz < -30 dBm over 1 GHz (according to GSM spec)	< -30 dBm (according to GSM spec.)	< -30 dBm (according to GSM spec.)
Receiver RF level	Better than – 102 dBm	– 102 dBm	Better than – 102 dBm
Receiver RX Bit error rate	< 2.4%	< 2.4%	< 2.4%

Current consumption, talk and standby times

Talk time	GSM up to 12 hours
Operating time	Up to 8 hours Music playback up to 27 hours
Standby time	GSM up to 380 hours

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USSD technical data

Feature	Support
USSD support	GSM Phase 1/2 (Cross-phase compatibility). GPRS behaviour according to class B.
Mode support -mode	UI-mode supported. SAT initiated USSD supported.
UI-mode details	• Possible to scroll the text up and down in USSD messages. • Possible to highlight embedded numbers and take actions accordingly.

GPRS technical data

Dimension	Support
Compatible GPRS and SMG specifications	Release 99 according to ETSI specification.
Data rates	Multislot class 10 supported (4+2) CS-1, CS-2, CS-3, CS-4 9,050 bps, 13,400 bps, 15,600 bps, 21,400 bps supported (network-dependent).
Medium Access Modes	Dynamic allocation
Support of Packet Control Channels (PBCCH/PCCCH)	Yes
Network operation mode	NOM I, II, III
Support of GPRS/CS combined procedures	Yes
Network control mode	NC0 and 2
Support of access in 2 phases	Yes
Support of PRACH on 11 bits	Yes
Support of GPRS re-selection C31/C32	Yes
Support of static and dynamic addressing	Yes
Support of power control Uplink and Downlink	Uplink = yes, Downlink is a network feature.
Support of ciphering algorithms	GEA1, GEA2
Support of compression algorithms	Yes, V42bis and IP header compression.
Mode of operation	Class B and C supported.

Dimension	Support
R Reference point	Physical layer: Support of RS232 PPP is supported as L2 layer in the R reference point Authentication algorithms PAP, CHAP supported
IP connectivity	PDP type IP is supported IP termination in mobile or TE (laptop, PDA) supported
PDP context	10 PDP context descriptions stored in mobile PDP context description is edited via application in mobile, AT-command or via OTA Simultaneous PDP contexts are supported, maximum 2.
SIM	GPRS aware and non-GPRS aware SIM cards are supported.
AT commands	Some of the supported commands: AT+CGDCONT - DEFINE PDP CONTEXT AT+CGQREQ - Quality of Service Profile (REQUESTED) AT+CGQMIN - Quality of Service Profile (Minimum Acceptable) AT+CGATT - PACKET DOMAIN SERVICE ATTACH OR DETACH AT+CGACT - PDP CONTEXT ACTIVATE OR DEACTIVATE AT+CGDATA - ENTER DATA STATE For more information, see www.sonyericsson.com/developer

GPRS maximum data rates (Kpbs)

		CS-1 9.05 Kbps	CS-2 13.5 Kbps	CS-3 15.6 Kbps	CS-4 21.4 Kbps
4 + 1	Rx	36.2	53.6	62.4	85.6
	Tx	9.05	13.4	15.6	21.4

Hardware buttons

On/Off button
Keypad with 12 keys
Note-it key
Multi-messaging key
Keylock key
Back button
Navigation key, 5-way: up, down, left, right and inwards
C (Cancel) key
Two selection keys (immediately below the screen)

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On/Off button
Volume up/down rocker key. Long press on this button skips to previous or next track or radio station.
Camera key

Text input

Numeric keypad-based predictive text input.
Handwriting recognition and on-screen keyboard with advanced text prediction, including automatic word completion and next word and spelling suggestions.

Third party application support

Note: The list below, dated November 15 2007, may be subject to future updates, that is, new applications may be added, others removed.

Application	
Accuweather – Offers access to a wealth of world-wide weather. Detailed current conditions give the user a look at what the weather is currently doing for their location, or for any of thousands of locations around the world.	Try & Buy application from Accuweather
Advanced Call Manager – Ultra-fast recognition of remote callers.	Try & Buy application from Webgate
Cafe Sudoko –	Preloaded application from Java
DreamConnect –	Try & Buy application from Dreamspring
Easy search –	Try & Buy application from Webgate
Google Mobile Maps – Lets a user easily find a location and get directions on how to go there.	Free application from Google
Handy Expense – Where is the money gone during business trips. Handy Expense keeps track of them, and also compiles expense reports.	Try & Buy application from Epocware
Handy Safe – A perfect assistant for secure and convenient management of data, like passwords, credit card details, user names, accounts, Web pages, and insurance policies.	Try & Buy application from Epocware
Investigators, Java for Symbian (touch enabled) –	Free application from Java
iSkoot – Solution for making and receiving Skype calls. iSkoot eliminates the need for special hardware and consumers don't have to go looking for a WiFi hot spot.	

Application	
Quadrapop Abstract –	Free application from Java
SIMS2 Touch –	Preloaded application from Java
Slideshow viewer –	Free application from Java
Wayfinder Navigator – Together with a Bluetooth GPS, turns the phone into a top-of-the-line GPS Navigator. Editor's choice Mobile Magazine 2005.	Try & Buy application from Wayfinder. Preloaded for some markets.
Web camera – Turns G700c into a wireless (Bluetooth wireless technology) or USB web camera. Works with most Windows applications and online services, such as Skype, Yahoo, AOL IM, MSN, YouTube, Grouper, MySpace.	Try & Buy application from Warelex
Worldmate – World clock, global weather forecasts, comprehensive flight schedules for over 800 airlines, and much more.	Try & Buy application from Mobimate

Music player

File formats	.3ga - 3GPP™ Multimedia File .3gp - 3GPP™ Multimedia File .aac - Advanced Audio Coding .amr - Adaptive Multi-Rate Codec .au - uLaw/AU Audio File .imy - iMelody Ringtone Format .jts - MMAPI built-in Tone sequence .m4a - MPEG-4 Audio File .mid - Midi Melody (MusicDJ™) .mid - Scalable Polyphony MIDI .midi - Musical Instrument Digital Interface .mmf - SMAF (Synthetic music Mobile Application Format) .mp3 - MPEG Audio Stream, Layer III .mp4 - MPEG-4 Audio File .mxmf - Mobile XMF (eXtensible Music Format) .ra - Real Media .ram - Real Media .rmf - Beatnik Rich Music Format .rng - Nokia Ringtone Format .wav - Waveform Audio .wma - Windows Media Audio .xmf - eXtensible Music Format

Audio decoding	iMelody
	AMR-NB
	Midi
	SP-Midi
	XMF
	DLS
	MPEG-4 AAC-LC
	aacPlus (HE AAC, AAC+)
	Enhanced aacPlus (EAAC+)
	MPEG-1 1/2/2.5 Layer 3 (MP3)
	WAV
	Real Audio 9
	WMA, Windows Media Audio 9

Video player

File formats	.3gp[a] - 3GPP™ Multimedia File
	.mp4[b] - MPEG-4 Video File
	.pvx - Packet Video Streaming
	.ram - Real Media
	.rm - Real Media
	.sdp - SDP format
	.wmv - Windows Media Video
Streaming transport	RTSP according to 3GPP™
Video decoding	MPEG-4 Simple Visual Profile, Levels 0-3
	H.263 Profile 0, Level 10
	H.263 Profile 3, Level 10
	H.264 Baseline profile, Level 1b (**Note:** from MR 1)
	Real Video version 8
	Real Video version 9
	Windows Media Video 9

a.AAC-LC and AMR-NB audio supported
b.AAC-LC and AMR-NB audio supported

3.2 Megapixel camera

Digital still camera (DSC)	
True colour	Yes
Digital zoom	Main camera: 3.2x zoom
Photo fix	Improves an under-exposed picture by calculating and adjusting the light balance
Still camera settings bar	
Shoot modes	Normal, Panorama, Multi-shot
Scenes	Auto, Portrait, Landscape, Twilight, Sport, Document

Picture sizes (resolution)	3 MP (2048x1536 pixels) 2 MP (1632x1224 pixels) 1 MP (1280x960 pixels) VGA (640x480 pixels)	
Focus	Fixed	
Flash (LED light)	Auto, On, Off	
ISO settings	ISO 400, ISO 200, ISO 100, ISO Auto	
Self-timer	Off, On	
Effects	Off, Negative, Solarization, Sepia, Black & White	
White balance	Auto, Incandescent, Fluorescent, Daylight, Cloudy	
Metering mode	No	
Still camera setup		
Picture quality	Fine, Normal, Economy	
Red-eye reduction	No	
Shutter sound	On (4 different), Off	
Image stabilizer	No	
Auto review	Off, On	
Reset file number	No	
Save to memory	Phone memory, Memory Stick and Memory Stick preferred (preset)	
Video recorder		
Video size (resolution)	QVGA 320x240 pixels for high-quality video clips QCIF 176x144 pixels for message video clips	
Frame rate	15 fps (frames per second)	
Video camera settings bar		
Video clip length	High quality video, For messages	
Focus	Fixed	
Light	Off, On	
Night mode	Off, On	
Self-timer	Off, On	
Effects	Off, Negative, Solarization, Sepia, Black & White	
White balance	Auto, Incandescent, Fluorescent, Daylight, Cloudy	
Metering mode	No	
Microphone	On, Off	
Video camera setup		

Video stabilizer	No
Auto review	Off, On
Reset file number	No
Save to memory	Phone memory, Memory Stick and Memory Stick preferred (preset)

Pictures

Formats	JPEG, BMP, GIF (including animated), PNG, WBMP and SVG-tiny; Symbian internal file format MBM
Sharing via	Bluetooth wireless technology, MMS, Email, PC file transfer, USB

Image decoders

Decoder	Details	Size	Colour depth	File format
GIF	87a/89a			
JPEG	ISO/IEC JPEG • Baseline DCT • Progressive DCT • Non-differential • Huffman coding • Symbol 'SOF2'	Megapixel		• JFIF v1.02 • EXIF v2.2
BMP	The bitmap image format used by Windows®	XRAM dependent, VGA default	18-bit	
WBMP				
PNG				

Image encoders

Encoder	Details	Size	Colour depth	File format
GIF	89a			
JPEG	ISO/IEC JPEG • Baseline DCT • Non-differential • Huffman coding • Symbol 'SOF0'	Megapixel		• EXIF v2.2
BMP	The bitmap image format used by Windows®	XRAM dependent, VGA default	18-bit	
WBMP				

Short message service (SMS)

Feature	Support in G700c
SMS Centre Number	Possible to preset the SMS Centre Number.
Pictures	Possible to insert a picture or an icon into the text message. EMS compliant mobile handsets will be able to see the picture correctly.
Input methods	Keyboard, on-screen keyboard, touchscreen, predictive text input and multitap.
Reply to messages	Possible to reply to received messages by SMS, MMS or phone call.
Copy, cut and paste words	Yes
Teaching of predictive words that are not in the predictive dictionary	Yes
Possibilities when creating a message:	
Save a sent message in a "sent items" folder	Yes
Insert a line in the message	Yes
Assign a validity period to the message	Yes
Print via IrDA	No IrDA functionality in phone
Use pre-defined messages	No
Possibilities when receiving a message:	
Reply to the sender	Yes
Forward the message	Yes
Save the message on SIM	No
Get delivery time and date	Yes, but not via messaging
Print via IrDA	No IrDA functionality in phone
Possibilities of the previously sent message:	
Delivery report of the message	Yes
Forward the message	Yes
Save the message on SIM	Yes
Know the remaining capacity storage	Yes
Print via IrDA	No IrDA functionality in phone
Possibilities of the previously received message:	
Reply to the sender	Yes

Feature	Support in G700c
Save the message in the Inbox	Yes
Forward the message	Yes
Know the remaining capacity storage	Yes
Supported ways for replying to a received SMS:	
Via SMS	Yes
Via phone call (set up a call to the number contained in the message body)	Yes
Via USSD session	No
Possibility to offer the user the ability of sending an SMS to a list of recipients	Yes, using phonebook groups or entering multiple numbers manually.
Possibility to write an email address as a recipient address	No
SMS storage	In handset and SIM
Nokia Picture Messaging	No

Enhanced message service (EMS)

Feature	Support in G700c
Level of compliance supported by the handset regarding the specifications described in release 99.	Enhanced Messaging Service (EMS) according to the standard 3GPP™ TS 23.040 v4.3.0, with the addition of the ODI feature from 3GPP™ TS 23.040 v5.0.0.
Outgoing messages	Possible to: • see how many short messages an EMS message consists of before sending it • choose whether to send the message or not after writing it.
Incoming messages	• A signal is heard once all parts of the message have been received. • It is possible to re-use the content of an EMS message. Sounds, pictures, and animations can be inserted in a new message, if the object is not protected using ODI.
Concatenated messages	A receipt is received in the handset when all parts of a concatenated message have been delivered.
Insert objects	Possible to add pictures, animations and sounds to an EMS message.
Text formatting	• Centred, left and right aligned text. • Small, normal and large font size. • Bold, italic, underlined and strikethrough style.

Feature	Support in G700c
Sounds	Chimes high, chimes low, ding, tada, notify, drum, claps, fanfare, chords high, chords low.
I-melody	Yes, version 1.2.
Melodies	Possible to: • send and receive melodies via EMS, if the melodies are not protected by copyright • download melodies and commercial tunes • create melodies.
WBMP	Yes
Picture sizes	16 x 16 mm, 32 x 32 mm, variable size in black and white.
Pictures	Possible to: • edit pictures • send and receive pictures via EMS, if the pictures are not copyright-protected • create pictures • download pictures • receive pictures in enhanced messages originated by service providers.
Animations	The handset supports the following animations: I am ironic, I am glad, I am sceptic, I am sad, WOW!, I am crying. Plus the other nine animations defined in 23.040 v4.3.0. It is possible to send and receive animations.
TP-PID field value given by the handset before sending an EMS message	0x00

Multimedia messaging service (MMS)

Feature	Support in G700c
Support of MMS protocol stack version	1.2
MMS/circuit-switched parameters and MMS/packet-switched parameters placement	MMS is bound to a Data Account. A Data Account contains either circuit-switched parameters or packet-switched parameters.
Possibility to pre-configure the MMS parameters in factory	• MMS circuit-switched: Yes • MMS packet-switched: Yes
Possibility to configure the MMS parameters by OTA provisioning	• MMS circuit-switched: Yes • MMS packet-switched: Yes
Possibility for all the parameters from the parameters set to be OTA provisioned at the same time	• MMS circuit-switched: Yes • MMS packet-switched: Yes

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Feature	Support in G700c
Possibility for only one parameter from the parameters set to be OTA provisioned	Using Device Management: • MMS circuit-switched: Yes • MMS packet-switched: Yes Using Client Provisioning: • MMS circuit-switched: No • MMS packet-switched: No
OTA provisioning solution	OMA Device Management and OMA Client Provisioning supported
MMS User Agent functional entity will be a separate entity from Web browser:	Yes
MMS User Agent support	OMA UAProf.
Supplier indication of realized interoperability tests between its MMS User Agent and MMS Relay/Server from other suppliers	Yes
Support of a standard or a proprietary procedure for OTA provisioning of MMS parameters	OMA Device Management and OMA Client Provisioning
Functionalities that the user is able to set during message composition:	• Message *subject* • MSISDN recipient address • *email* recipient address • Message *Cc* recipient(s) address(es) • *delivery report* request • *read-reply* report request • *message* priority • *validity* period
From where can the user insert multimedia elements into an MMS message:	• Phone memory • Memory card
Supplier indication if MMS User Agent will be able to handle a network-based address book	No
Possibility for sent messages to be memorized into a folder in handset memory	Yes
Actions that the user can perform after message notification:	• Retrieve the message immediately • Defer message retrieval • Reject message
Actions that the user can perform after message retrieval:	• Reply to the sender of the message • Reply to the sender and to Cc people • Forward the message • Delete the message • Save message into terminal

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Feature	Support in G700c
Multimedia codecs/formats supported for audio	AMR, MP3, AAC, WAV Depending on content class/creation mode settings, the following formats are also supported: • AAC-LC • AMR-NB • SP-MIDI • XMF • DLS • Real Audio
Multimedia codecs/formats supported for video	MP4, H263 Depending on content class/creation mode settings, the following format is also supported: Real Video
Multimedia codecs/formats supported for image	Baseline JPEG, wbmp, SVG, GIF 89a
MMS User Agent provides:	• Text formatting facilities (only text size) • Coloured text/background (Viewer/player supports coloured text and background.) • Keyboard, On-screen keyboard, touchscreen and predictive text input.
Support of MMS protocol stack version	1.2
MMS/circuit-switched parameters and MMS/packet-switched parameters placement	MMS is bound to a Data Account. A Data Account contains either circuit-switched parameters or packet-switched parameters.
Possibility to pre-configure the MMS parameters in factory	• MMS circuit-switched: Yes • MMS packet-switched: Yes
Possibility to configure the MMS parameters by OTA provisioning	• MMS circuit-switched: Yes • MMS packet-switched: Yes

SIM AT services supported

Service		Mode	Support
CALL CONTROL BY SIM			Yes
DATA DOWNLOAD TO SIM		Cell Broadcast SMS	Yes Yes
DISPLAY TEXT		Text of up to 240 characters (120 UCS2 coded).	Yes
	bit 1:	0 = normal priority	Yes
		1 = high priority	Yes
	bit 8:	0 = clear message after a delay	Yes
		1 = wait for user to clear message	Yes

Service		Mode	Support
GET INKEY		General: The GET_INKEY requires that the user confirms his/her choice	Yes
	bit 1:	0 = digits (0-9, *, # and +) only	Yes
		1 = alphabet set	Yes
	bit 2:	0 = SMS default alphabet	Yes
		1 = UCS2 alphabet	Yes
	bit 3:	0 = character sets defined by bit 1 and bit 2 are enabled	Yes
		1 = character sets defined by bit 1 and bit 2 are disabled and the Yes/No response is requested	Yes
GET INPUT		General: No. of hidden input characters	252
	bit 1:	0 = digits (0-9, *, # and +) only	Yes
		1 = alphabet set	Yes
	bit 2:	0 = SMS default alphabet	Yes
		1 = UCS2 alphabet	Yes
	bit 3:	0 = ME may echo user input on the display	Yes
		1 = user input not to be revealed in any way (see note)	Yes
	bit 4:	0 = user input to be in unpacked format	Yes
		1 = user input to be in SMS packed format	Yes
	bit 8:	0 = no help information available	Yes
		1 = help information available	Yes
LAUNCH BROWSER			Yes
MORE TIME			Yes
PLAY TONE			Yes
POLLING OFF			Yes
POLL INTERVAL			Yes
PROVIDE LOCAL INFORMATION		'00' = Location Information (MCC, MNC, LAC and Cell Identity)	Yes
		'01' = IMEI of the ME	Yes
		'02' = Network Measurement results	Yes
		'03' = Date, time and time zone (DTTinPLI)	Yes
		'04' - Language setting	Yes
		'05' - Timing setting	Yes

Service	Mode	Support
REFRESH	General: The reset option requests the user to wait while the phone restarts	Yes
	'00' =SIM Initialization and Full File Change Notification	Yes
	'01' = File Change Notification	Yes
	'02' = SIM Initialization and File Change Notification	Yes
	'03' = SIM Initialization	Yes
	'04' = SIM Reset	Yes
SELECT ITEM		Yes
SEND DTMF		Yes
SEND SHORT MESSAGE bit 1:	0 = packing not required 1 = SMS packing by the ME required	Yes Yes
SEND SS		Yes
SEND USSD		Yes
SET UP CALL	General: Capability configuration Set up speech call CallParty Subaddress DTMF support	Yes No Yes
	'00' = set up call, but only if not currently busy on another call	Yes
	'01' = set up call, but only if not currently busy on another call, with re-dial	Yes
	'02' = set up call, putting all other calls (if any) on hold	Yes
	'03' = set up call, putting all other calls (if any) on hold, with re-dial	Yes
	'04' = set up call, disconnecting all other calls (if any)	Yes
	'05' = set up call, disconnecting all other calls (if any), with re-dial	Yes
SET UP EVENT LIST	'00' = MT call	Yes
	'01' = Call connected	Yes
	'02' = Call disconnected	Yes
	'03' = Location status	Yes
	'04' = User activity	Yes
	'05' = Idle screen available	Yes
	'06' = Card reader status	Not Applicable

Service	Mode	Support
	'07' = Language selection	Yes
	'08' = Browser termination	Yes
	'09' = Data available	No
	'OA' = Channel status	No
SET UP IDLE MODE TEXT		Yes, 1 row of text is supported
SET UP MENU		Yes
TIMER MANAGEMENT		Yes
OPEN CHANNEL		No
CLOSE CHANNEL		No
RECEIVE DATA		No
SEND DATA		No
GET CHANNEL STATUS		No

User interaction with SIM AT

Display text

Text of up to 240 characters (120 UCS coded) is supported.

Text clearing times are 5-20 seconds and a 60 second timeout limit for the user to clear the text. 'Key' responses:

- 'Long Back' – Proactive session terminated by user.
- 'Back' – Backward move in proactive session.

Any other key clears the display if the command is performed successfully.

Get inkey

Prompt for a one-character input. Pressing 'Ok' without entering a character gives warning message "Minimum 1 character". 'Key' responses:

- 'C' clears current character.
- 'Long Back' terminates the proactive session.

- 'Back' – Backward move in proactive session.
- 'OK' – Command performed successfully.

Get input

Prompt for character input. The phone will refuse to accept further input when maximum response length is exceeded. UI Maximum Response lengths:

- Digits Only – 160 characters.
- SMS default alphabet characters – 160 characters, or 1530 characters if concatenation is activated.
- Hidden Characters (digits only) – 20 characters.

'Key' responses:

- 'C' clears current character.
- 'Long Back' terminates the proactive session.
- 'Back' – Backward move in proactive session.
- 'OK' – Command performed successfully.

Select item

Scroll to highlight item for selection. 'Key' responses:

- Navigational key press down – Scroll down list.
- Navigational key press up – Scroll up list.
- Long 'Back' terminates proactive session.
- 'Back' – Backward move in proactive session.
- 'OK'– Command performed successfully.

Send short message

Default message "Sending message, please wait" can be replaced for the Alpha Identifier text, or sup-pressed completely if a null text is provided. Default responses are "MESSAGE FAILED" or "MESSAGE SENT". 'Key' responses:

- Long 'Back' or 'Back' ends the proactive session.

Set up call

If the ME is on a call when the command 'Set up Call', 'putting all other calls on hold' is sent, the user will see the text 'Setting up a call current call will be held'. If 'OK' is pressed the current call will be put on hold and the new call set up.

Integrated browser technical data

Security	WTLS Class 1, 2, 3; WTLS Cipher RC5 with key length 128TLS/SSL; TLS Cipher RC4 with key length 128SignText
Certificates	Predefined: Baltimore, Entrust, GlobalSign, GTA Cybertrust, RSA, Thawte and VeriSign.

Security

Data protection	SIM PIN (at power on)Device Lock (at power on and/or activated by screen saver)
Browser	TLS, SSL, WTLS, Certificate handling
Third party applications	Support for signed applications

Abbreviations

3GPP™

3rd Generation Partnership Project.

AAC

Advanced Audio Codec.

ALS

Alternate Line Service. A system that allows a user to have more than one line allocated to a single SIM subscription.

AMR

Adaptive Multi-Rate. A variable rate speech coding (compression) method selected by the 3GPP™ for the 3G evolution of the GSM phones.

API

Application Programming Interface

AU, .au

Format for audio data files.

Bluetooth™

Bluetooth™ wireless technology is a secure, fast, point-to-multipoint radio connection technology. It is a specification for a small-form factor, low-cost radio solution providing links between mobile computers, mobile phones and other portable handheld devices, and connectivity to the Internet. Available from the Bluetooth Special Interest Group (SIG).

BMP

Microsoft Windows Bitmap. A graphics format defined by Microsoft supporting 1, 4, 8 or 18-bit colour depth. No compression, so files can be large.

bps

Bits per second – rate of data flow.

CB

Cell Broadcast. Type of SMS message.

cHTML

A version of HTML optimized for small devices.

CLDC

Connected Limited Device Configuration. The J2ME 'configuration' implemented in G700c. CLDC specifies a runtime environment with specifically limited resources, suitable for memory-constrained devices.

CLI

Calling Line Identity. Shows the number of the person calling in the mobile phone display. G700c will also display the name and photo of the caller if this information has been stored in Contacts.

The user can then make an informed choice as to whether or not to take the call. Not all numbers can be displayed! To use this service, it must be supported by the user's network.

COM Port

Defines a serial/RS-232 port within the Windows environment. May be physical (COM1 port on the rear of the PC) or virtual (COM5 port communicating with a PC card modem).

CS

Circuit-switched. Connection from A to B which has a fixed bandwidth and is maintained over a period of time, such as, a voice telephone call.

CS-1 to CS-4

Coding Scheme. Determines the data rate per timeslot in GPRS.

CSD

Circuit-switched Data. CSD is a GSM service providing a CS data connection at a rate of 9.6 or 14.4 Kbps.

CSS

Cascading Style Sheet. A feature of browsers.

DCIM

Digital Camera Images. The name of the root directory when storing images according to the Design rule for Camera File system (DCF) standard.

DRM

Digital Rights Management; controlling copying and distribution of contents, with respect to intellectual property rights.

DTMF

Dual Tone Multi Frequency. A method of coding digits as a combination of two audible tones.

DUN

Dial-Up Networking.

ECML

Electronic Commerce Modelling Language.

e-GSM

Extended GSM. New frequencies specified by the European Radio Communications Committee (ERC) for GSM use when additional spectrum is needed (Network-dependent). It allows Operators to transmit and receive just outside GSM's core 900MHz frequency band. This extension gives increased network capability.

EMS

Enhanced Messaging Service. An extension of SMS enabling pictures, animations, sound and text formatting to be added to text messages. 3GPP™ has included EMS in the standards for SMS.

ETSI

European Telecommunications Standards Institute.

FCC

Federal Communications Commission. US government agency which regulates radio communications.

FR

Full Rate, speech coding.

GIF

Graphics Interchange Format. Format for storing images which also supports animated images. Highly compressed by limiting the colour palette to 16 or 256 colours.

G-MIDI

General MIDI. Specifies a minimum level of performance compatibility.

GPRS

General Packet Radio Services.

GSM

Global System for Mobile Communications. GSM is the world's most widely-used digital mobile phone system, now operating in over 160 countries around the world.

GSM 900

The GSM system family includes GSM 900, GSM 1810 and GSM 1900. There are different phases of roll-out for the GSM system and GSM phones are either phase 1 or phase 2 compliant.

GSM 1810

Also known as DCS 1810 or PCN, this is a GSM digital network working on a frequency of 1810 MHz. It is used in Europe and Asia-Pacific.

GSM 1900

Also known as PCS. Refers to a GSM system running in the 1900MHz band. Used in the USA and Canada, for instance.

HR

Half Rate, speech coding.

HSCSD

High Speed Circuit-switched Data.

HTML

HyperText Markup Language.

HTTP

HyperText Transfer Protocol.

IMAP4

Internet Message Access Protocol version 4. Used to collect email from a mail server. Has more features than POP3.

iMelody

A monophonic ringtone format.

IrDA

Infrared Data Association.

ISDN

Integrated Services Digital Network. Can provide circuit-switched data connections in multiples of 64 Kbps.

ISP

Internet Service Provider.

J2ME™

Java2™ Micro Edition – an edition of the Sun Microsystems Java programming/runtime environment specifying two runtime environment 'configurations' aimed at small devices.

Java™ Phone

An API in Java™ used for interacting with a phone.

JFIF

JPEG File Interchange Format

JNI™

Java™ Native Interface

JPEG

Joint Photographic Experts Group, best known for the .jpg format for still image compression.

Kbps

Kilobits per second – rate of data flow.

LAN

Local Area Network.

MAC Address

Media Access Control address. This is a hardware address that uniquely identifies each node on a network.

MBM

Stands for Multi-BitMaps and is a Symbian-specific file format to hold bitmaps. A single MBM file can contain several bitmaps with different resolution and/or color-depth.

ME

Mobile Equipment. (Phone excluding SIM card)

MeT

Mobile Electronic Transactions. An initiative from Ericsson, Nokia and Motorola to establish a secure and consistent framework for mobile transactions.

MIDI

Musical Instrument Digital Interface. MIDI defines a protocol and file format which enables music to be described and stored in binary form.

MIDP

Mobile Information Device Profile. An API (or 'profile' in J2ME nomenclature) defined to enable a standard programming API for mobile devices. MIDP compliant applications execute in the restricted environment defined by the CLDC.

MIME

Multipurpose Internet Mail Extensions. A protocol defining how messages are sent on the Internet. MIME is used to describe how attachments are encoded and what type of data they contain.

MMS

Multimedia Messaging Service. Logical extension of SMS and EMS, MMS defines a service enabling sound, images and video to be combined into multimedia messages.

MMS-C

MMS Service Centre.

MP3

MPEG Audio Layer 3. An audio compression technology that is part of MPEG-1 and MPEG-2 specifications. Commonly used to distribute music on the Internet and on portable players.

MPEG

Moving Picture Experts Group. A working group of ISO/IEC in charge of the development of standards for coded representation of digital audio and video.

MS

Mobile Station. (Phone and SIM card)

MT

Mobile Termination.

OS

Operating System, such as Symbian OS, Linux, Microsoft Windows.

OTA

Over-The Air configuration. To provide settings for the phone by way of sending a message, SMS, over the network to the phone. This reduces the need for the user to configure the phone manually.

PC

Personal Computer.

PCS

Personal Communications Services, often used to describe GSM1900 networks.

PDA

Personal Digital Assistant. A handheld computer having functions such as address book, calendar etc.

PDP

Packet Data Protocol.

Personal Java™

An edition of Java™ appropriate for mobile devices such as PDAs.

Phone book

A memory in the SIM card where phone numbers can be stored and accessed by name or position.

PIM

Personal Information Management. Generic term for applications such as Contacts, Calendar, Tasks etc.

PKI

Public Key Infrastructure.

PNG

Portable Network Graphics. Format for storing images on file with data compression but without lowering of quality (loss of information).

POP3

Post Office Protocol. Used to collect email from a mail server.

PSTN

Public Switched Telephone Network, such as, ordinary analogue phone line for speech and/or computer modem.

PTD

Personal Trusted Device. Concept in MeT.

QCIF

Quarter Common Intermediate Format. A video format size of 176 x 144 lines.

QQVGA

Quarter Quarter VGA, 160 x 120 pixels.

QVGA

Quarter VGA size, typically refers to a portrait oriented screen 240 pixels wide x 320 pixels high.

RMF

Rich Music Format^{TM}. A file format developed by Beatnik combining the compact size of MIDI files with the high quality of MP3 and WAV.

Rx

In telecommunications, Rx is the abbreviation for 'receive'. Tx is the abbreviation for 'transmission' or 'transmit'.

SC

Service Centre (for SMS).

SDK

Software Development Kit. An SDK (or 'devkit') is typically a set of development tools that allows a software engineer to create applications for a certain software package, hardware platform, operating system, or similar.

SIM card

Subscriber Identity Module card – a card that must be inserted in any GSM-based mobile terminal. It contains subscriber details, security information and memory for a personal directory of numbers. The card can be a small plug-in type or credit card-sized, but both types have the same functions. G700c uses the small plug-in card.

SIM-AT

SIM Application Toolkit – a means of providing simple applications that are stored on the SIM card.

SMS

Short Message Service. Allows messages of up to 160 characters to be sent and received via the network Operator's message centre to a mobile phone.

SMSCB

SMS Cell Broadcast.

SMTP

Simple Mail Transfer Protocol. Protocol used to send email from an email client via an SMTP server.

SIR IrDA

Standard IrDA, up to 115 kbps IrDA.

SS

Supplementary Service.

T9

T9, which stands for Text on 9 keys, is a patented predictive text technology for mobile phones, developed by Tegic Communications. T9's objective is to make it easier to type text messages by allowing words to be entered by a single key press for each letter.

TCP/IP

Transmission Control Protocol/Internet Protocol.

TLS

Transport Layer Security. As used by Web browsers.

Tx

In telecommunications, Tx is the abbreviation for 'transmission' or 'transmit'. Rx is the abbreviation for 'receive'.

TTY (Teletypewriter)

A telecommunication device with a keyboard and a visual display that is used primarily by people who are deaf, hard of hearing, or have a speech disability.

UI

User Interface. Sometimes called 'Man-Machine Interface'.

UIQ

A customizable pen-based user interface for media-rich mobile phones that is based on the Symbian OS. It may be used as the basis for building an attractive and efficient UI.

URL

Uniform Resource Locator. Points to a service or information on the Internet.

USSD

Unstructured Supplementary Services Data. Narrow-band GSM data service. An example is, entering *79*1234# might return the stock price for stock 1234.

vCal; vCalendar

vCalendar defines a transport and platform-independent format for exchanging calendar and scheduling information for use in PIMs/PDAs and group schedulers. vCalendar is specified by IETF.

vCard

vCard automates the exchange of personal information typically found on a traditional business card, for use in applications such as Internet mail, voicemail, Web browsers, telephony applications, call centres, PIMs /PDAs, pagers, fax, office equipment, and smart cards. vCard is specified by IETF.

VGA

Video Graphics Array. Graphics standard introduced by IBM, having a resolution of 640 x 480 pixels.

VPN

A Virtual Private Network (VPN) is a communications network tunnelled through another network. A common application is secure communications over the public Internet.

WAP

Wireless Application Protocol. Handheld devices, low bandwidth, binary coded, a deck/card metaphor to specify a service. A card is typically a unit of interaction with the user, that is, either presentation of information or request for information from the user. A collection of cards is called a deck, which usually constitutes a service.

WAV

Short for Waveform audio format. WAV (or WAVE) is a Microsoft and IBM audio file format standard for storing audio on a PC.

WBMP

Wireless BitMap. Part of the WAP specifications, an image format optimized for small mobile devices.

WIM

Wireless Identity Module.

WMA

Windows Media Audio, a compressed audio file format developed by Microsoft.

WML

Wireless Markup Language. A mark-up language used for authoring services, fulfilling the same purpose as HyperText Markup Language (HTML) does on the World Wide Web (www). In contrast to HTML, WML is designed to fit small handheld devices.

WTLS

Wireless Transport Layer Security. Part of WAP, WTLS provides privacy, data integrity and authentication on transport layer level between two applications.

XHTML™

Extensible Hypertext Markup Language.

XML

Extensible Markup Language.

Related information

Documents

- G700c User guide
- G700c Web guide
- G700c FAQ

- AT Command Reference Manual
- WAP 2.0 Specifications

Links

- www.sonyericsson.com
- www.sonyericsson.com/fun/
- www.sonyericsson.com/developer/
- www.sonyericsson.com/support
- www.ericsson.com/mobilityworld/
- www.extendedsystems.com
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- www.w3.org/TR/xhtml-basic/
- www.java.sun.com

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